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THE

LONDON ENCYCLOPÆDIA.

VOL. III.

ARSENIC TO BELL.

THE

ONDON ENCYCLOPÆDIA,

OR

UNIVERSAL DICTIONARY

OF

ENCE, ART, LITERATURE, AND PRACTICAL MECHANICS,

COMPRISING A

POPULAR VIEW OF THE PRESENT STATE OF KNOWLEDGE.

ILLUSTRATED BY
NUMEROUS ENGRAVINGS, A GENERAL ATLAS,
AND APPROPRIATE DIAGRAMS.

> Sic oportet ad librum, presertim miscellanei generis, legendum accedere lectorem, ut solet ad convivium conviva civilis. Convivator annititur omnibus satisfacere; et tamen si quid apponitur, quod hujus aut illius palato non respondeat, et hic et ille urbane dissimulant, et alia fercula probant, ne quid contristent convivatorem.
>
> *Erasmus.*
>
> A reader should sit down to a book, especially of the miscellaneous kind, as a well-behaved visitor does to a banquet. The master of the feast exerts himself to satisfy his guests; but if, after all his care and pains, something should appear on the table that does not suit this or that person's taste, they politely pass it over without notice, and commend other dishes, that they may not distress a kind host.
>
> *Translation.*

BY THE ORIGINAL EDITOR OF THE ENCYCLOPÆDIA METROPOLITANA,
ASSISTED BY EMINENT PROFESSIONAL AND OTHER GENTLEMEN.

IN TWENTY-TWO VOLUMES.

VOL. III.

LONDON:
PRINTED FOR THOMAS TEGG, 73, CHEAPSIDE;
R. GRIFFIN & Co., GLASGOW; TEGG AND CO., DUBLIN; ALSO J. & S. A. TEGG,
SYDNEY AND HOBART TOWN.
1839.

BO[illegible]
5 [illegible] 1964
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LONDON:
PRINTED BY J. HADDON, CASTLE STREET, FINSBURY.

THE
LONDON ENCYCLOPÆDIA.

ARSENIC.

ARSENIC, *αρσενικον*, ARSENICUM, in mineralogy and chemistry, called by Aristotle *σανδαραχη*, by Theophrastus *αρρενικον*, by the Romans orpimentum and arsenicum; is a reddish-colored ponderous mineral, caustic, corrosive, and highly poisonous; which was used by the ancients in medicine and painting. Aristot. de Hist. Anim. l. 8, c. 24; Theophrast.; Dioscor. l. 5, c. 121; Plin. l. 34, c. 18; Cels. de Re Med. l. 5, c. 5; Gal. de Comp. Med. sec. Loc. l. 4. In the Linnæan system, it is a genus of metals having these generic characters: Bluish white, some becoming black, and falling to powder in the air; soft and extremely brittle; specific gravity 8·310: subliming without melting in a moderate heat in a white powder, and emitting a strong garlic smell. Its sublimed oxid gives an acrid taste to water, and turns vegetable blues red. When dissolved in muriatic acid, and a watery solution of sulphurated hydrogen poured into it, it precipitates a fine yellow powder.

The principal species are, 1. A. nativum, native arsenic, of the three varieties: *α*. Uncombined, having a metallic lustre and separating into spherical incrustations. *β*. With micaceous particles. *γ*. Friable and porous. Found in the British Isles, Norway, Germany, Saxony, &c. in spar, baryte, or feldspar, massive, rarely disseminated, often composed of hemispheric layers, corroded, branched, perforated, botryoidal, or stalactitic; color lead-gray, but its surface soon tarnishing and becoming black by exposure to the air; streak bluish-gray, powder dull and blackish; sometimes a little sonorous when struck against a hard body, and so soft as to be easily cut with a knife. Before the blow-pipe it emits a white smoke, diffusing its peculiar and highly poisonous vapors to a great distance; burning with a blue flame and gradually vanishing, depositing a white oxid in the form of a powder: specific gravity 5·670 to 5·729; always alloyed with some iron, and often contains some cobalt, bismuth, silver, and sometimes a little gold.

2. A. calciforme; white arsenic; white oxid of arsenic; white, soluble in eighty times its weight of water. It is found in a loose dust or mealy powder; in a state of crystallisation; or in an indurated state combined with earth; in various parts of Great Britain, Germany, Hungary, Saxony, Bohemia, &c. Color white or gray, with often a tinge of red, yellow, green, or black: before the blow-pipe it sublimes, but does not inflame, and tinges borax green: specific gravity 3,700.

3. A. auripigmentum; orpiment, yellow arsenic. Ponderous, yellow, curved, or undulately foliated, of a waxy internal lustre, evaporating almost entirely before the blow-pipe. Found in Great Britain, Hungary, Georgia, Turkey, &c.; massive, disseminated, or in small imperfect crystals; color, various shades of yellow, with a considerable waxy lustre, and some transparency; streak orange-yellow, not metallic; texture foliated, with the plates mostly curved or undulated, rarely striate, a little flexible, but not elastic; effervesces with hot nitric acid, burns with a bluish flame, and before the blow-pipe evaporates, leaving behind a small portion of earth: specific gravity 3·048 to 3·521.

4. A. sandaraca; red arsenic; ruby arsenic; realgar. Somewhat ponderous, red, with an orange-yellow streak, in straight foliations, melting easily before the blow-pipe; burning with a blue flame and white arsenical vapors. Found in Sicily, Naples, Hungary, Bohemia, China, Japan, &c.; massive, disseminated, superficial, or crystallised in small acute-angled, quadrangular, or acicular prisms; color aurora-red, ruby, scarlet, crimson or blood-red, often variegated with yellow traces: texture lamellar, with the foliations a little flexible, and so soft as to be cut with a knife, and frequently exhibiting a brilliant lustre; streak yellowish-red; powder scarlet; in nitric acid it loses its color; specific gravity 3·338.

5. A. sulphuratum; marcasite; white mundic; white pyrite; pyritical arsenical ore. Hard, bluish-gray with metallic lustre, before the blow-pipe emitting white arsenical vapors and blue sulphureous flames. Found in various parts of Great Britain, Germany, Sweden, Bohemia, Saxony, &c. in irregular masses, disseminated, investing or crystallised in cubes or four-sided prisms; specific gravity 6·522.

6. A. albicans; misspickel; marcasite. Of a steel-white color and lustre, hard, emitting white arsenical vapors before the blow-pipe, but no sulphureous flame or vapor. Found in Cornwall, near Dublin, in Bohemia, Silesia, Saxony, &c. generally dispersed among tin ores in granulations, or crystallised in four-sided double pyramids, or four-sided quadrangular prisms: color sometimes silvery, gray, or yellowish, or iridescently variegated when tarnished: texture compact, sometimes a little splintery, with the surface marked with decussate grooves or black ramifications; effervesces with nitric acid without heat, and yields

E

an arsenical smell when rubbed. It consists of arsenic alloyed with a considerable quantity of iron, but little or no sulphur; specific gravity from 5·753 to 6·522.

7. A. argentiferum; argentiferous arsenic. Of a silvery lustre and very fine granular texture, emitting arsenical vapors before the blowpipe, and when fused with lead leaving a silver bead. Found in the mines of Saxony, Bohemia, Germany, and Spain; massive, disseminated, or acicular; color nearly that of the last, but brighter and more permanent; burns with a white flame, and leaves a reddish residuum: by solution in nitro-muriatic acid the silver will be precipitated. It consists of arsenic, sulphur, iron, and from 1 to 10 or 12 per cent. of silver: specific gravity 4·087.

The following is the method of the celebrated Mr. Chevenix for the assay and analysis of arsenical ores. Reduce the ore to a very fine powder, and digest it in nitric acid sufficient to acidify and take up the whole of the arsenic; pour off the clear liquor, and boil on the residue some distilled water: filter, and add the water to the nitrous solution: then neutralise the excess of acid by potash, taking care, however, not to have an excess of alkali, and add nitrate of lead as long as any precipitate takes place: wash the precipitate in cold water, dry, and weigh it. As the arsenical ores often contain sulphur, it is possible that the arseniat of lead thus procured may be mixed with a little sulphat of lead: to decide this, digest the powder in some warm dilute muriatic acid, and the arseniat of lead will be dissolved, leaving the sulphat behind.

The arsenic of commerce is prepared in Saxony by roasting the cobalt ores in the manufacture of zaffre. These ores consist principally of arsenic, cobalt, iron, and a little sulphur; the first and last ingredients are easily separated by roasting, which is performed not in the open air, but in an oven, the flue of which runs horizontally to a considerable distance before it bends upwards. The arsenic and sulphur, when liberated, are deposited for the most part in the horizontal flue. In this state it is called

Crude arsenic, or flowers of arsenic, and the form it assumes is that of a grayish meal streaked with yellow, which is occasioned by the sulphur uniting with parts of the arsenic, and composing orpiment. From the crude arsenic the

White arsenic of commerce is prepared by mixing the crude with potash or lime, and resubliming. The sulphur and other impurities are thus combined with the alkali, and the white oxide is driven over into a heated receiver, where it melts into a heavy, colorless, transparent glass: by exposure to the air for a short time this glass becomes opaque, and resembles in its fracture the finest white china; it is in this state that the white arsenic of commerce is sold in the shops, and kept in our laboratories; and as it is then an oxide of the metal approaching very nearly to a state of purity, it is not difficult, by separating its oxygen, to reduce it into

Pure metallic arsenic. For this purpose the white arsenic is mixed with any of the vegetable or animal expressed oils, till it becomes of the consistence of very soft glazier's putty, and round or oblong pieces of the paste are dropped into a Florence flask, or earthen retort, so as not to adhere to the sides. It is then put into a sand-bath, or over a gentle charcoal fire, and heated very gradually until it ceases to emit thick vapors, when the heat may be increased by degrees to obscure redness. Shortly after the vessel may be removed, and when cold, broken; the neck and upper part will contain a crystallised oxide of arsenic; below, a thick crust of metallic arsenic; and at the bottom some impurities, which must be laid aside. The other products are to be pulverised with half their weight of charcoal, and sublimed again as before; by which means the arsenic is rendered pure, and will be found to line the vessel in the form of a shining crust and crystals.

The principal properties of pure arsenic, beside those mentioned in the beginning of this article, are the following:—That it is not perceptibly soluble in water, and is easily tarnished by exposure to the air; the best method of preserving it unaltered is to immerse it in water or alcohol. With carbon or hydrogen it does not combine; but the latter substance, in the state of gas, dissolves it. Oxygen unites with it by combustion, forming arsenical acid. With sulphur it may be readily united, forming either realgar or orpiment, according to the proportions of the ingredients, or the methods of uniting them: these substances are really sulphurets of arsenic, and their properties, with their mode of preparation, when not found native, may be found under their names. Arsenic combines also readily with phosphorus, forming phosphuret of arsenic, which is black and brilliant; but with azotic gas it has not been united. Muriatic acid attacks arsenic only if aided by heat; but, by distilling equal parts of orpiment and corrosive muriate of mercury (corrosive sublimate) in a gentle heat, a blackish corrosive liquor is obtained, which is the sublimated muriat of arsenic, or butter of arsenic. Arsenic combines with most metals, forming with them alloys, and rendering them more fusible and brittle; though such of them as were before very fusible become refractory: it possesses also the singular property of destroying the magnetic virtue of iron, and of all other metals susceptible of it.

The most useful alloys of arsenic are:—1. With platinum, which is formed by fusing that metal and the white oxide of arsenic together. By this means platinum, itself so untractable, may be wrought into the utensils required. The mixture, after fusion, is hammered at a red heat into bars, and the arsenic is gradually driven off. 2. With copper, which is formed by fusing the two metals together in a close crucible, their surface being covered with common salt, to prevent the arsenic from being oxidised by the air. This alloy is white and brittle, and when mixed with a little tin or bismuth is used for a variety of purposes in the arts, when it is known by the names of white copper or white tombac. 3. With iron, which is likewise done by fusion. This alloy, however, is often found native, and is then called misspickel. The other metals with which arsenic has been united, are gold, silver, tin, lead, nickle, zinc, antimony, and bismuth: it also forms an amalgam with mercury, by keeping them some hours over the fire, constantly agitating the mixture. Arsenic is capable of combining with two different proportions of oxygen; by the first is formed the white oxide already described, or arsenious acid, as it is denominated by Fourcroy, on account of the many acid properties which it exhibits; by the second is produced arsenic or arsenical acid, which was discovered in 1775 by Scheele, who also made himself acquainted with its most remarkable properties.

In pharmacy, the white oxide of arsenic is directed by the London Pharmacopæia to be sublimed; after which it is to be boiled with an equal weight of carbonate of potash, in order to form the liquor arsenicalis, sometimes called Fowler's solution, or the tasteless ague drop. This contains one grain of arsenic in two drams, is given in doses of a few drops in intermittent fevers, and in several eruptive diseases. Caution is necessary in the exhibition of so dangerous a remedy. Arsenic has been used externally in cancer, lupus, &c. in form of an ointment. For an account of arsenic, as a poison, its symptoms, effects, and remedies, see Poison.

Arsenical Magnet, Magnes Arsenicalis, is a preparation of antimony, with sulphur and white arsenic.

ARSENIUS, a deacon of the Roman church of great learning and piety, who was selected by the pope as tutor to Arcadius, son of the emperor Theodosius. Arsenius arrived at Constantinople A. D. 383. The emperor happening one day to go into the room where Arsenius was instructing his pupil, found Arcadius seated and his preceptor standing; at this he was exceedingly displeased, took from his son the imperial ornaments, made Arsenius sit in his place, and ordered Arcadius for the future to receive his lessons standing uncovered. Arcadius, however, profited but little by his tutor's instructions, for some time after he formed a design of despatching him. Arsenius, however, hearing of the design, retired to the deserts of Sceté, where he passed many years in devotion, and died aged ninety-five.

Arsenius, bishop of Constantinople, in the thirteenth century, excommunicated Michael Palæologus, for taking the imperial crown from John Lascaris the son of Theodore. Though Michael solicited absolution, the bishop refused, unless he would restore the crown; in consequence of which Arsenius was banished to a small island, where he died.

ARSENOTHELYS, among ancient naturalists, the same with hermaphrodite. The Greeks use the word both in speaking of men and beasts, it is formed from *αρσμν* and *ϑηλυς*, male and female.

ARSENVAL, in geography, a town of France, in the department of the Aube, and chief place of a canton in the district of Bar-sur-Aube, twenty-three miles east of Troyes.

ARSES, or **Arsames**, king of Persia, succeeded Artaxerxes Ochus about A. M. 3612, and after a short reign of less than four years was slain by Bagoas, who had murdered his predecessor, and succeeded by Darius Codomanus.

ARSHIN, in commerce, the most common Russian measure of length = 16 vershok = 315$\frac{1}{19}$ Paris lines. It is also a Chinese measure, but one Chinese arshin = 302 Paris lines. Three arshins = 1 fathom, and 500 fathoms = 1 verst.

ARSIA, in ancient geography, a small river which had a northern course, and served as a boundary between Histria and Illyria, to the north of the Flanatic gulf. It there terminated Italy on the north-east of the Polatic promontory.

ARSINOE, in ancient geography, the name of various towns mentioned by Strabo, Ptolemy, Stephanus, &c. viz. of five towns in Cilicia, one of which had a station for ships; of three in or near Cyprus; viz. one inland, formerly called Marium, another north of it between Acamas and Soli, and the third in the south, with a port, between Citrum and Salamis. A sea-port in Cyrene, formerly called Teuchira. A town in Egypt near the west extremity of the Arabian Gulf, and south of Hierapolis, called also Cleopatris. Another in the Nomos Arsinoites, mentioned on some coins of Adrian, and formerly called Crocodilorum Urbs, from its abounding with crocodiles; Ptolemy calls this town an inland metropolis, with a port called Ptolemais. A sea-port of Lycia formerly named Patara, but called Arsinoe by Ptolemy Philadelphus after his queen. And three towns of Troglodytæ, the chief of which was situated near the mouth of the Arabian gulf, which towards Ethiopia is terminated by a promontory called Dire. This Arsinoe is called Berenice, with the distinction Epidires; because situated on a neck of land running out a great way into the sea. Also the name of several princesses of Egypt; particularly, 1. the daughter of Ptolemy Lagus, and wife of Lysimachus king of Thrace: 2. the wife of Ptolemy Philadelphus, who named several towns after her.

Arsinoe, in entomology, a species of papilio, found in the island of Amboyna, the wings of which are tailed, indented, fulvous, spotted with black; and the posterior ones marked both above and beneath with two ocellated spots. It is figured by Seba and Cramer.

ARSINOITES, Nomos, an ancient district of Egypt, west of the Heracleotes, on the western banks of the Nile.

ARSIS, and **Thesis**, in prosody, are names given to two proportional parts into which every foot or rhythm is divided. By arsis and thesis are usually meant no more than a proportional division of the metrical feet, made by the hand or foot of him that beats the time. And in measuring the quantities of words the hand is elevated, as well as let fall; that part of the time which is taken up in measuring the foot, by lifting the hand up, is termed arsis or elevatio; and the part where the hand is let fall, thesis or positio. Vid. Augustin de Musica, lib. ii. cap. 10. In plaudendo enim quia elevatur et ponitur manus, partem pedis, sibi elevatio vendicat, partem positio.

Arsis and thesis are used as musical terms when the subject of a fugue or point is inverted or reversed; i. e. when one part rises and the other falls. These two words are Greek: arsis comes from *αιρω*, tollo, I raise or elevate; *θεσις* depositio, remissio, a depression or lowering. These terms were applied by the ancients to the motion of the hand in beating time.;

ARSON, in English law, is the malicious and wilful burning of the house or out-house of another man, which is felony. This is an offence of great malignity, and more pernicious to the public than simple theft; because, first, it is an offence against that right of habitation which is acquired by the law of nature as well as by the laws of society; next, because of the terror and confusion that necessarily attends it; and, lastly, because in simple theft the thing stolen only changes its master, but still remains *in esse* for the benefit of the public; whereas by burning, the very substance is absolutely destroyed.—It is also frequently more destructive than murder itself, of which too it is often the cause; since murder, atrocious as it is, seldom extends beyond the felonious act designed; whereas fire too frequently involves in the common calamity persons unknown to the incendiary, and not intended to be hurt by him, and friends as well as enemies. If the house be a man's own, the act is not felony and punishable with death, but only a great misdemeanor, and punishable by fine, imprisonment or pillory.

ARSUR, Asor, Arsaf, or Arsid, a hamlet on the coast of Syria, which has sometimes received the name of a city, because Solomon is supposed to have built the city Asor upon the site. It contains a fortress and mosque, in the last of which are a few Mahommedan monks.

ARSURA, in ancient customs, a term used for the melting of gold or silver, either to refine them or to examine their value. The method of doing this is explained at large in the Black Book of the Exchequer, ascribed to Gervaise in the chapter De Officio Militis Argentarii, being in those days of great use, on account of the various places and different manners in which the king's money was paid. Arsura is also used for the loss or diminution of the metal in the trial. In this sense a pound was said, tot ardere denarios, to lose many penny-weights.

Arsura, in medicine, is used by some writers for the erysipelas.

Arsura, in metallurgy, is used for the dust and sweepings of silversmiths, and others who work in silver, melted down, and which they call their sweep.

ART,
Ar'tful,
Ar'tfully,
Ar'tfulness,
Ar'tisan,
Ar'tist,
Ar'tless,
Ar'tlessly,
Ar'tifice,
Ar'tificer,
Ar'tificial,
Arti'ficially.

Lat. *ars*, from *αρετη*, manly energy, strength, or skill. The power of doing any thing arising from a clear and perspicuous knowledge of what the practice of it requires. Artful signifies evil intention. One who exercises a mechanical art is an artisan, he who excels in the fine arts is an artist. Any skilful workman is an artificer; artifice in its present use implies deception.

Hel. We, Hermia, like two *artificial* gods,
Created with our needles both one flower,
Both on one sampler, sitting on one cushion;
Both warbling of one song, both in one key;
As if our hand, our sides, voices, and minds,
Had been incorporate. *Shakspeare.*

Why, I can smile, and murder while I smile;
And cry, content, to that which grieves my heart;
And wet my cheeks, with *artificial* tears. *Id.*

Weaker than a woman's tear,
Tamer than sleep, fonder than ignorance,
And *artless* as unpractis'd infancy.
Dryden. Troilus and Cressida.

Rich with the spoils of many a conquer'd land,
All arts and *artists* Theseus could command,
Who sold for hire, or wrought for better fame
The master painters and the carvers came. *Dryden.*

The rest in rank: Honoria, chief in place
Was *artfully* contriv'd to set her face,
To front the thicket, and behold the chace. *Id.*

Vice is the natural growth of our corruption. How irresistibly must it prevail, when the seeds of it are *artfully* sown, and industriously cultivated. *Rogers.*

What are the most judicious *artisans*, but the mimics of nature? *Wotton's Architecture.*

Best and happiest *artisan*,
Best of painters, if you can,
With your many-color'd art,
Draw the mistress of my heart.
Guardian.

Thus *artists* melt the sullen ore of lead,
With heaping coals of fire upon its head;
In the kind warmth, the metal learns to glow,
And loose from dross the silver runs below.
Parnell.

Sweet *artless* songster! thou my mind dost raise
To airs of spheres, yea, and to angels's lays.
Drummond.

In oratory, the greatest *art* is to hide *art*. *Swift.*

If we compare two nations in an equal state of civilisation, we may remark that where the greater freedom obtains, there the greater variety of *artificial* wants will obtain also. *Cumberland.*

The merchant, tradesman, and *artisan* will have their profit upon all the multiplied wants, comforts, and indulgences of civilised life. *Id.*

In every quarter of this blessed isle,
Himself [the mind] both present is and president,
Nor once retires, a happy realm the while,
That by no officers lewd ravishment,
With greedie lust and wrong consum'd *art*,
He all in all, and all in every part,
Does share to each his due and equal dole compart.
Fletcher's Purple Island.

Among the several *artifices* which are put in practice by the poets, to fill the minds of an audience with terror, the first place is due to thunder and lightning.
Addison.

Poets, like painters, thus unskill'd to trace
The naked nature and the living grace,
With gold and jewels cover ev'ry part,
And hide with ornaments their want of *art*.
Pope's Essay on Criticism.

O still the same Ulysses, she rejoin'd;
In useful craft successfully refin'd;
Artful in speech, in action, and in mind. *Pope.*

Embosom'd in the deep where Holland lies,
Methinks her patient sons before me stand,
Where the broad ocean leans against the land,
And sedulous to stop the coming tide,
Lift the tall rampire's *artificial* pride. *Goldsmith.*

A man will no more carry the *artifice* of the bar into the common intercourse of society, than a man who is paid for tumbling on his hands will continue to tumble when he should walk on his feet. *Johnson.*

He feels no ennobling principle in his own heart, who wishes to level all the *artificial* institutions which have been adopted for giving a body to opinion, and permanence to fugitive esteem. *Burke.*

ART has been more particularly defined to be a habit of the mind prescribing rules for the due production of certain effects; or the introducing the changes of bodies from some fore-knowledge and design in a person endued with the principle or faculty of acting. The word has been sometimes derived from *αρος*, utility, profit; and is found in that sense in Æschylus.

According to lord Bacon it is a proper disposition of the things of nature by human thought and experience, so as to make them answer the designs and uses of mankind. Nature, according to that philosopher, is sometimes free, and at her own disposal; and then she manifests herself in a regular order; as we see in the heavens, plants, animals, &c.—Sometimes she is irregular and disorderly either through some uncommon accident or depravation in matter, when the resistance of some impediment perverts her from her course; as in the production of monsters. At other times she is subdued and fashioned by human industry, and made to serve the several purposes of mankind. This last is what we call art. In which sense, årt stands opposed to nature. Hence the knowledge of nature may be divided into the history of generation, of pretergeneration, and of arts. The first considers nature at liberty; the second her errors; and the third her restraints.

Art has been distinguished from science; by the latter being regarded as furnishing the principles of all art. Or science, scientia, all human knowledge, is said to be divisible into those purer sciences which relate to the ideas or laws of the mind, and the relation they bear to each other; and the mixed or applied sciences—that relation which the same ideas bear to the external world. In this view the mixed and applied sciences are but other terms for all the fine and useful arts. Chambers has observed long ago, in the excellent preface to his original Cyclopædia: An Art and a Science, only seem to differ as less and more pure: a science is a system of deductions made by reason alone, undetermined by any thing foreign or extrinsic to itself: an art, on the contrary, requires a number of data, and postulata, to be furnished from without; and never goes any length, without at every turn needing new ones. It is, in one sense, the knowledge and perception of these data that constitutes the art; the rest, that is, the doctrinal part, is of the nature of science; which attentive reason alone will descry. An art, in this light, appears to be a portion of science, or general knowledge, considered, not in itself as science, but with relation to its circumstances or appendages. In a science the mind looks directly backwards and forwards to the premises and conclusions: in an art we also look laterally to the concomitant circumstances. A science, in effect, is that to an art, which a stream running in a direct channel, without regard to any thing but its own progress, is to the same stream turned out of its proper course, and disposed into cascades, jets, cisterns, ponds, &c. In which case the progress of the stream is not considered with regard to itself, but only as it concerns the works; every one of which modifies the course of the stream, and leads it out of its way. It is easy to trace the progress of the former, from its issue, as it flows consequentially; but a man ever so well acquainted with this will not be able to discover that of the latter, because it depends on the genius, humor, and caprice of the engineer who laid the design.'

The learned author of Hermes says, If it be asked, What art is; we have to answer, 'It is an habitual power in man, of becoming the cause of some effect, according to a system of various and well-approved precepts.' If it be asked, On what subject art operates; we can answer, 'On a contingent, which is within the reach of the human powers to influence.' If it be asked, For what reason, for the sake of what, art operates; we may reply, 'For the sake of some absent good, relative to human life, and attainable by man, but superior to his natural and uninstructed faculties.' Lastly, if it be asked, 'Where it is the operations of art end?' We may say, 'Either in some energy, or in some work.' —*Harris's Three Treatises*, dialogue i.

Arts are properly divided into liberal and mechanical:—

ARTS, LIBERAL, or POLITE, are those that are noble or ingenious, and worthy of being cultivated for their own sake, without any immediate regard to any pecuniary emolument. Such as depend more on the imagination, or on the labor of the mind, than on that of the hand; or that consist more in speculation than operation, and have a greater regard to amusement and curiosity than necessity. Such are poetry, music, painting, grammar, rhetoric, the military art, architecture, and navigation. They were formerly to be summed up in the following Latin verse:

Lingua, Tropus, Ratio, Numerus, Tonus, Angulus, Astra.

In the eighth century the whole circle of sciences was composed of the seven liberal arts, as they were called; viz. grammar, rhetoric, logic, arithmetic, music, geometry, and astronomy; the three former of which were distinguished by the title of trivium, and the four latter by that of quadrivium.

ARTS, MECHANICAL, are those wherein the hand and body are more concerned than the mind; and which are chiefly cultivated for the sake of the profit attending them. Of which kind are most of those which furnish us with the necessaries of life, and are popularly known by the name of trades and manufactures. Such are weaving, turnery, brewing, masonry, clock-making, carpentry, joinery, foundry, printing, &c. These arts, which indeed are innumerable, were formerly comprised in this verse.

Rus, Nemus, Arma, Faber, Vulnera, Lana, Rates.

They take their denomination from *μηχανη*, machine, as being all practised by means of some machine or instrument. With the liberal arts it is otherwise; there being several of them which may be learnt and practised without any instrument at all; as logic, eloquence, medicine, properly so called, &c.

Lord Bacon has observed that the arts which relate to the sight and hearing are reputed liberal, beyond those which regard the other senses, and are chiefly employed in matters of luxury; these are usually called the fine arts; such are poetry, painting, sculpture, music, gardening, and architecture.

As all arts have this common property according to Mr. Harris, that they respect human life, it is evident that some contribute to its necessities, as medicine and agriculture; and others to its elegance, as music, painting, and poetry. The former seem to have been prior in time to the latter. Men must naturally have consulted how to live and to support themselves, before they began to deliberate how to render life agreeable. Indeed this is confirmed by fact; as no nation has been known so barbarous and ignorant as not in some degree to have cultivated the rudiments of these necessary arts; and hence possibly they may appear to be more excellent and worthy, as having claim to a preference derived from their seniority. The arts, however, of elegance are not destitute of pretensions, if it be true that nature formed us for something more than mere existence. Nay farther, if well-being be clearly preferable to mere being, and this, without the other, be contemptible, they may have reason perhaps to aspire even to a superiority. *Harris, ubi supra*, p. 54.

The history of the origin and progress of particular arts is recited under their respective denominations in the course of this work. It may be here observed however, in general, that most of the arts that are necessary to the subsistence, or conducive to the convenience and comfort of mankind, have had a very early origin.

Some useful arts must be nearly coeval with the human race; for food, clothing, and habitation, even in their original simplicity, require some art. Many others are of such antiquity as to place the inventors beyond the reach of tradition. Several have gradually crept into existence without any recorded inventor or history. The busy mind, however, accustomed to a beginning in all things, cannot rest till it finds or imagines a beginning to every art.

It has been generally admitted that the arts had their rise in the East, and that they were conveyed from thence to the Greeks, and from them to the Romans. The Romans, indeed, seem to have been chiefly indebted to the Greeks, by whom they were excelled in point of invention. The Romans acknowledged this superiority, for they sent their youth to Greece in order to finish their education; and from this circumstance we may infer, that they considered that country as the seat of the arts and sciences, and as a school where genius would be excited by the most finished models, and the taste corrected and formed. Pliny and other writers have, nevertheless, given hints which lead us to believe that the Romans possessed a more extensive knowledge of the arts than modern writers are sometimes willing to allow; and that several inventions regarded as recent are only old ones revived and again applied to practice. The dark ages at once extinguished the knowledge of the past, and retarded the revival of art; yet it cannot be denied, that several important discoveries altogether unknown to the ancients were made in those ages. Of this kind were the inventions of paper, painting in oil, the mariner's compass, gunpowder, printing, and engraving on copper: see the several articles. After the invention of the compass and printing, two grand sources were opened for the improvement of science. As navigation was extended, new objects were discovered to awaken the curiosity and excite the attention of the learned; and the ready means of diffusing knowledge afforded by the press, enabled the ingenious to make them publicly known. Ignorance and superstition, the formidable enemies of philosophy in every age, began to lose some of that power which they had usurped, and different states, forgetting their former blind policy, adopted improvements which their prejudices had before condemned.

In countries, however, where civil and ecclesiastical tyranny prevailed, the progress of the useful and elegant arts was slow, and struggled with many difficulties. Particular events, indeed, have occurred in all ages and nations which have roused the exertions of genius, and furnished occasion for making important and useful discoveries. The history of Greece and Rome, and even of modern Europe, will afford many obvious facts that confirm and illustrate this observation. We can add but a few other miscellaneous ones.

In different countries the progress of the same arts has been extremely different. Though the compass was used in China for navigation long before it was known in Europe, yet to this day, instead of suspending it in order to make it act freely, it is placed upon a bed of sand, by which every motion of the ship disturbs its operation. Water-mills for grinding corn are described by Vitruvius, and wind-mills were known in Greece and in Arabia as early as the seventh century; yet no mention is made of them in Italy till the fourteenth; and that they were not known in England in the reign of Henry VIII. appears from a household book of the Northumberland family, stating an allowance for three mill-horses, 'two to draw in the mill, and one to carry stuff to the mill and fro.' Water-mills for corn must in England have been of a late date. The ancients had mirror-glasses, and employed glass to imitate crystal vases and goblets; yet they never thought of using it in windows. In the thirteenth century, the Venetians were the only people who had the art of making crystal glass for mirrors. A clock that strikes the hours was unknown in Europe till the end of the twelfth century. And hence the custom of employing men to proclaim the hours during night; which to this day continues in Germany, Flanders, and England. Galileo was the first who conceived an idea that a pendulum might be useful for measuring time; and Huygens was the first who put the idea in execution, by making a pendulum clock. Hook, in 1660, invented a spiral spring for a watch, though a watch was far from being a new invention. Paper was made no earlier than the fourteenth century; and the invention of printing was a century later. Silk manufactures were long established in Greece before silk-worms were introduced there. The manufacturers were provided with raw silk from Persia: but that commerce being frequently interrupted by war, two monks, in the reign of Justinian, brought eggs of the silk-worm from Hindostan, and taught their countrymen the method of managing them.—The art of reading made a very slow progress. To encourage that art in England, the capital punishment for murder was remitted, if the criminal could but read, which in law language is termed benefit of clergy. One would imagine that the art must have made a very rapid progress when so greatly favored: but there is a signal proof of the contrary; for so small an edition of the Bible as 600 copies, translated into English in the reign of Henry VIII. was not wholly sold off in three years. And the people of England must have been profoundly ignorant in Queen Elizabeth's time, when a forged clause added to the twentieth article of the established creed passed unnoticed till about a century ago.

The circumstances which arouse the national spirit upon any particular art, promote activity to prosecute other arts. When the Romans came to excel in the art of war, they rapidly improved in other arts. Nævius composed in verse seven books of the Punic war; besides comedies, replete with bitter raillery against the nobility. Ennius wrote annals, and an epic poem; and Lucius Andronicus became the father of dramatic poetry in Rome. And the Roman genius for the fine arts was much inflamed by Greek learning when free intercourse between the two nations was opened.

The progress of art seldom fails to be rapid, when a people happen to be roused out of a torpid state by some fortunate change of circumstances: public liberty now gives to the mind a spring which is vigorously exerted in every new pursuit. The Athenians made but a mean figure under the tyranny of Pisistratus; but, upon regaining their freedom and independence, arts flourished with arms, and Athens became the chief theatre for science as well as for the fine arts. The reign of Augustus Cæsar, which put an end to the rancor of civil war, and restored peace to Rome with the comforts of society, proved an auspicious era for literature; and produced a cluster of Latin historians, poets, and philosophers, to whom the moderns are indebted for their taste. A similar revolution happened in Tuscany about 350 years ago. That country having been divided into a number of small republics, the people excited by mutual petty quarrels, became ferocious and bloody, flaming with revenge for the slightest offence. But being united under the Great Duke of Tuscany, these republics enjoyed the sweets of peace and a mild government; when the retrospect of recent calamities roused the national spirit, and produced ardent application to arts and literature. The restoration in England in 1660, which put an end to an envenomed civil war, promoted improvements of every kind, and arts and industry made a rapid progress. Had the nation, upon that favorable turn of fortune, been blessed with a succession of able and virtuous princes, arts and sciences might much earlier have flourished in their modern perfection. Some important action even of doubtful event, a struggle for liberty, the resisting a potent invader, or the like, have also had beneficial influences on the progress of art. Greece, divided into small states frequently at war with each other, advanced in literature and the fine arts to unrivalled perfection. The Corsicans, while engaged in a perilous war in defence of their liberties, exerted a vigorous national spirit; they founded a university for arts and sciences, a public library, and a public bank. After a long stupor during the dark ages of ecclesiastical tyranny, arts and literature revived among the turbulent states of Italy. The Royal Society in London, and the Academy of Sciences in Paris were both instituted after prolonged civil wars that had animated the people and roused their activity. On the other hand, as the progress of arts and sciences towards perfection is greatly promoted by emulation, nothing is sometimes more fatal than to remove this spur; as when some extraordinary genius appears to soar above rivalship. Thus mathematics long seemed to be declining in Britain: the great Newton, having surpassed all the ancients, left the moderns without any hope of equalling him; for what man will enter the lists who despairs of victory?

The useful have in all ages paved the way for the fine arts. Men upon whom the former had bestowed every convenience turned their thoughts to the latter. Beauty was studied in objects ot sight; and men of taste attached themselves to the fine arts, which multiplied their enjoyments and improved their benevolence. Sculpture and painting made an early figure in Greece; which afforded plenty of beautiful originals to be copied in these imitative arts. Statuary, a more simple imitation than painting, was sooner brought to perfection; the statue of Jupiter by Phidias, and of Juno by Polycletes, though the admiration of all the world, were executed long before the art of light and shade was known. Another cause concurred to advance statuary before painting in Greece, viz. a great demand for statues of their gods. Architecture, as a fine art, made a slower progress. Proportions upon which its elegance chiefly depends, cannot be accurately ascertained, but by an infinity of trials in great buildings; a model cannot be relied on: for a large and small building, even of the same form, require different proportions. Literature as a branch of the fine arts deserves a separate consideration. See LITERATURE.

The cause of the decline of the fine arts may be illustrated by various instances. The perfection of vocal music is to accompany passion, and to enforce sentiment. In ancient Greece, the province of music was well understood; and being confined within its proper sphere, it had an enchanting influence. Harmony at that time was very little cultivated, because it was of very little use; melody reaches the heart, and it is by it chiefly that a sentiment is enforced, or a passion soothed: harmony, on the contrary, reaches the ear only; and it is a matter of undoubted experience, that the melodious airs admit but of very simple harmony. Artists, in later times, ignorant why harmony was so little regarded by the ancients, applied themselves seriously to its cultivation, and have been wonderfully successful. But successful at the expense of melody; which, in modern compositions, generally speaking, is lost amid the blaze of harmony. In the Italian opera, the mistress is degraded to be handmaid; and harmony triumphs, with very little regard to sentiment. Among the Greeks also, as a conquered people, the fine arts decayed; but not so rapidly as at Rome under her various despotic emperors; the Greeks farther removed from the seat of government, being less within the reach of the Roman tyrants. During their depression they were guilty of the most puerile conceits; witness verses composed in the form of an axe, an egg, wings, and such like. The style of Greek authors, in the reign of Adrian, is unequal, obscure, stiff, and affected. Lucian is the only exception. We need scarce any other cause but despotism, to account for the decline of statuary and painting in Greece. These arts had arrived at their utmost perfection about the time of Alexander the Great; and from that time they declined gradually with the vigor of a free people; for Greece was now enslaved by the Macedonian power. It may in general be observed, that when a nation becomes stationary in that degree of power which it acquires from its constitution and situation, the national spirit subsides, and men of talents become rare. It is still worse with a nation that is sunk below its former power and pre-eminence; and worst of all, when it is reduced to slavery. Other causes concurred to accelerate the downfall of the arts mentioned. Greece, in the days of Alexander, was filled with statues of excellent workmanship; and there being little demand for more, the later statuaries were reduced to make heads and busts. At last the Romans put a total end, both to statuary and painting in Greece, by plundering it of its finest pieces; and the Greeks, exposed to the avarice of the conquerors, bestowed no longer any money on the fine arts. The decline of the fine arts in Rome is, by Petronius Arbiter, a writer of taste and elegance, ascribed to a cause different from any above mentioned, i. e. opulence, with its faithful attendants avarice and luxury. In England the fine arts are far from such perfection as to suffer by opulence. They are in a progress, indeed, towards maturity; but proceed at a very slow pace. Another cause that never fails to undermine a fine art in a country where it is brought to perfection, abstracting from every one of the causes above mentioned, has been already pointed out. Nothing is more fatal to an art or science, than performances so much superior to all of the kind as to extinguish emulation. This cause would have been fatal to the arts of statuary and painting among the Greeks, even though they had continued a free people. The decay of painting in modern Italy is probably owing to this cause: Michael Angelo, Raphael, Titian, &c. are lofty oaks, that bear down young plants in their neighbourhood, and intercept them from the sunshine of emulation. Had the art of painting made a slower progress in Italy, it might have there continued in vigor to this day. Architecture continued longer in vigor than painting, because the principles of comparison in the former art were less precise than in the latter. The artist who could not rival his predecessors in an established mode, sought out a new mode for himself, which, though perhaps less elegant or perfect, was for a time supported by novelty. Useful arts will never be neglected in a country where there is any police; for every man finds his account in them. Fine arts are more precarious. They are not relished but by persons of taste, who are rare; and such as can spare great sums for supporting them, who are still more rare. For that reason they will never flourish in any country, unless patronised by the sovereign, or by men of power and opulence. And richly do they merit such patronage, as one of the springs of government; multiplying amusements, and humanising manners.

Art, the second person singular of the verb to be, of which the English language affords no variation, except by adopting the plural, by saying You are, instead of Thou art. Thou beest indeed was anciently used, but it is quite obsolete.

Art and Part in Scots law. See Accessary.

ARTA, or Larta, a gulf, river, and town of European Turkey, in Albania, or Epirus, belonging to the government of Romania. The town is seated on the river of the same name, nine miles north of the spot where it falls into the gulf of Arta, above twenty miles north-east of Prevesa, and about 360 W. N. W. of Constantinople. The number of inhabitants, Christians as well as Turks, amounts to six thousand, who trade in cattle, wine, tobacco, cotton, flax, pulse, fur, leather, and other commodities. They also manufacture coarse woollen and other cloths. It is the seat of a Greek metropolitan and several European consuls. The gulf, otherwise called the gulf of Prevesa, extends a considerable way inland in an eastern direction, and from its rocks and sand banks, is very dangerous. Long. 21° 8′ E., lat. 39° 30′ N.

ARTABA, an ancient measure of capacity used by the Persians, Medes, and Egyptians.—The Persian artaba is represented by Herodotus as bigger than the Attic medimnus by three Attic chœnixes; from which it appears that it was equal to 6¾ Roman modii; consequently that it contained 166⅔ pounds of wine or water, or 126⅔ pounds of wheat. The Egyptian artaba contained five Roman modii, and fell short of the Attic medimnus by one modius; consequently held 133⅓ pounds of water or wine, 100 lb. of wheat, or sixty of flour.

ARTABANUS, the name of several kings of Parthia. See Parthia.

Artabanus, the brother of Darius I. and the uncle and murderer of Xerxes. See Artaxerxes.

ARTABAZUS, the son of Pharnaces, commanded the Parthians and Chorasmians in the famous expedition of Xerxes. After the battle of Salamis, he escorted the king his master to the Hellespont with 60,000 chosen men; and after the battle of Platæa, in which Mardonius engaged contrary to his advice, he made a noble retreat, and returned to Asia with 40,000 men.

ARTAKI, a town of Asiatic Turkey, in Natolia, on the south coast of the sea of Marmora, forty-five miles east of Gallipoli and ninety south-west of Constantinople. Long. 27° 39′ E., lat. 40° 18′ N.

Artakui, a town of European Turkey, in Romania, forty-eight miles north-west of Gallipoli.

ARTALIS (Joseph), a native of Mazara, A. D. 1628, who showed an early inclination both for poetry and arms. He finished his studies at fifteen years of age, when he fought a duel and killed his adversary. He took shelter in a church and afterwards studied philosophy. Candia being besieged by the Turks, he went to its relief, and displayed so much valor that he was created a knight of St. George. Being afterwards engaged in several rencounters and always victorious, he got the title of Chevalier de Sang, or the knight of blood. His literary talents obtained him the honor of being elected a member of several academies in Italy, and his military abilites procured him the favor of several princes, particularly of the Emperor Leopold I. and Ernest duke of Brunswick.

ARTAXATA, an ancient city, the metropolis of Armenia Major, and the residence of the Armenian kings: it was built according to a plan of Hannibal, for king Artaxias; and was situated on a branch of the river Araxes, which formed a kind of peninsula, and surrounded the town like a wall, except on the side of the isthmus, but this side was secured by a rampart and ditch. The town was deemed so strong that Lucullus, after having defeated Tigranes, durst not lay siege to it; but Pompey compelled him to deliver it without striking a blow. It was then levelled with the ground; but the Armenians have a tradition, that the ruins of it are still to be seen at a place called Ardachat. Sir John Chardin says, that it has the name of Ardachat, from Artaxias, whom in the east they call Ardechier. Here are the remains of a stately palace, which the Armenians take to be that of Tiridates, who reigned in the time of Constantine. One front of this building is half ruined, and there are many other fine antiquities.

Artaxata, or Atropatia, another city built also on the Araxes, in the northern part of Media.

ARTAXERXES I. king of Persia, surnamed Longimanus, from the uncommon length of his arms, was the youngest son of Xerxes, and was raised to the throne A. M. 3487, by Artabanus, the captain of the guards, who had privately murdered his father; but persuaded the young prince that his elder brother Darius had done it; whereupon, assisted by the guards, he killed Darius in his bed-chamber. But the murder and treason being afterwards discovered, Artabanus suffered the punishment he merited. Some reckon this king the Ahasuerus who married Esther; but, be that as it may, it is certain that he greatly favored the Jews, by not only authorising them to return to Judea, and rebuild Jerusalem, but also to collect money for the use of their temple; as well as by remitting their tribute, by encouraging their worship, and by making them a number of valuable presents, &c. See his letter to Ezra, chapter vii, 10—26. For an account of the other transactions of his reign, see Persia. He reigned about forty years, and died A. A. C. 447.

Artaxerxes II. surnamed Mnemon, from his great memory, succeeded his father Darius II. A. M. 3546, but had to contend for his kingdom with his younger brother Cyrus, who was assisted by the Greeks, but was at last overcome and slain. It was after this battle that Xenophon displayed his generalship by his memorable retreat with his army. Artaxerxes reigned forty-three years, and died A. M. 3589. See Persia.

Artaxerxes is also the name given in Scripture to, and probably assumed by, the impostor Oropastes; who, pretending to be Smerdis the son of Cyrus, reigned five months in Persia, after the death of Cambyses. During his short reign, the enemies of the Jews applied for, and obtained, an interdict of the rebuilding of the city and temple. See Ezra iv. 7.

ARTAXIAS, the founder of the kingdom of Armenia Major. See Armenia and Artaxata.

ARTEDI (Peter), a famous Swedish naturalist, born in 1705. He was educated at the university of Upsal, where he studied medicine; but his time was chiefly dedicated to ichthyology, in which he made many valuable discoveries.—Such was the friendship between him and Linnæus, that the longest liver was to be heir of all their MSS. He was drowned at Leyden in 1735. His Bibliotheca Ichthyologica and Philosophia Ichthyologica, were published by Linnæus in 1738.

ARTEDIA, in botany, a genus of the digynia order, and pentandria class of plants; ranking in the natural method, under the forty-fifth order, umbellatæ. The involucra are pinnatifid; the floscules of the disc are masculine; and the fruit is hispid with scales. The principal species is, viz. A. squamata, with squamose seeds, a native of the east. Rauwolf found it growing on mount Libanus. It is an annual plant, whose stalks rise about two feet high, sending out a few side branches, garnished with narrow compound leaves resembling those of dill.

ARTEMIDORUS, a Grecian teacher in Rome, who being intimate with Brutus, and learning from him of the intended assassination of Cæsar, delivered a note to him to inform him of it, as he went to the senate-house, and desired him to read it immediately, which Cæsar neglecting, fell a sacrifice to the plot.

Artemidorus, an ancient author, under Antoninus Pius, famous for his Treatise on Dreams, which was first printed in Greek at Venice in 1518. Rigaltius published an edition at Paris in Greek and Latin in 1603, and added some notes. Artemidorus wrote also treatises upon Auguries and Chiromancy; which are not extant.

ARTEMISIA I. queen of Caria, and the daughter of Ligdamis, marched in person in the expedition of Xerxes against the Greeks, and performed wonders in the sea-fight near Salamis, A. A. C. 480. Being pursued by an Athenian vessel, she attacked one of the Persian ships, commanded by the king of Calyndus, and sunk it; on which the Athenians, thinking that her ship was on the side of the Greeks, ceased their pursuit; but Xerxes was the principal person imposed upon in this affair; for believing that she had sunk an Athenian vessel, he declared that 'the men had behaved like women, and the women like men.' Xerxes entrusted her with the care of the young princes of Persia, his sons, when, agreeably to her advice, he abandoned Greece in order to return to Persia. These great qualities did not secure her from the weakness of love: she was passionately fond of a man of Abydos, whose name was Dardanus, and was so enraged at his neglect of her, that she put out his eyes while he was asleep. Having consulted the Delphian Oracle how to extinguish this passion, and being advised to go to Leucas, which was the usage of desperate lovers, she took the leap from thence, and was drowned, and interred at that place. Many writers confound this princess with the wife of Mausolus.

Artemisia II., queen of Caria, the widow of king Mausolus, has immortalised herself by the honors which she paid to the memory of her husband. She built for him, in Halicarnassus, a very magnificent tomb, called the Mausoleum, which was one of the seven wonders of the world, and from which the title of mausoleum was afterwards given to all tombs remarkable for their grandeur, but died of grief before the mausoleum was finished. She is said to have drank his ashes; and to have offered a prize of great value to the person who should compose the best eulogium on his memory. He died about the end of the 106th Olympiad, A. A. C. 351.

Artemisia, mugwort, southernwood, and wormwood; a genus of the polygamia superflua order, and syngenesia class of plants, ranking in the natural method under the forty-ninth order, compositæ nucamentaceæ. The receptacle is either naked or a little downy; it has no pappus; the calyx is imbricated with roundish scales; and the corolla has no radii. There are twenty-three species, of which the following are the most remarkable: viz.

1. A. abrotanum, or southernwood, which is kept in gardens for the sake of its agreeable scent, a low shrub, seldom rising more than three or four feet high. 2. A. absinthium, or common wormwood, grows naturally in lanes and uncultivated places, and is too well known to require any description. 3. A. arborescens, or tree-wormwood, grows naturally in Italy and the Levant, near the sea. It rises with a woody stalk, six or seven feet high, sending out many ligneous branches, garnished with leaves somewhat like those of the common wormwood, but more finely divided and much whiter. 4. A. dracunculus, or Tarragon, is frequently used in sallads, especially by the French, and is a very hardy plant, spreading greatly by its creeping roots. 5. A. maritima, or sea-wormwood, grows naturally on the sea-coast in most parts of Britain, where there are several varieties to be found. 6. A. Pontica, or Pontic wormwood, commonly called Roman wormwood, is a low herbaceous plant whose stalks die in autumn, and new ones rise up in the spring. The flowers appear in August, but are rarely succeeded by seeds in Britain. 7. A. santonicum, produces the semen santonicum, which is much used for worms in children. It grows naturally in Persia, from whence the seeds are brought to Europe. 9. A. vulgaris, or common mugwort, grows naturally on banks and by the sides of foot-paths in many parts of Britain: in gardens it proves a troublesome weed. The seeds of the santonicum are small, light, chaffy, composed as it were of a number of thin membranous coats of a yellowish color, an unpleasant smell, and a very bitter taste. They are celebrated for anthelmintic virtues, which they have in common with other bitters, and are sometimes taken with this intention, either along with molasses or candied with sugar. They are not often met with genuine in the shops. The leaves of the sea, common, and Roman wormwoods are used as stomachics, but are all very disagreeable: the Roman is the least so and therefore is to be preferred; but the other two kinds are generally substituted in its place. The distilled oil of wormwood is sometimes made use of externally as a cure for worms. The leaves of the vulgaris or common mugwort were commonly celebrated as uterine and antihysteric: an infusion of them is sometimes taken, either alone or in conjunction with other substances, in suppression of the menstrual evacuations. In some parts of this kingdom mugwort is of common use as a pot-herb. It is now, however, very little employed in medicine; and it is probably with propriety that the London college have rejected it from the Pharmacopœia.

The moxa, so famous in the eastern countries for curing the gout, by burning it on the part affected, is the lanugo or down growing on the under side of the leaves of a species of mugwort, supposed to be the same with our common sort. From some dried samples of this plant which were brought over to this country, Mr. Miller reckons them to be the same, differing only in size. He supposes that the lanugo of our mugwort would be equally efficacious. The abbe Crosier says the ancient Chinese made great use of it in medicine.

Artemisia, yearly festivals anciently observed in divers cities in Greece, particularly Delphi, in honor of Diana Artemis. In the artemisia a mullet was sacrificed to this goddess, as being thought to bear some resemblance to her, because it is said to hunt and kill the sea-hare.

ARTEMISIUM, a promontory on the north-east of Eubœa, (called Leon and Cale Acte by Ptolemy,) memorable for the first sea engagements between the Greeks and Xerxes, of which the following account is given by Gillies: 'The Grecian fleet was stationed in the harbour, while that of the Persians, too numerous for any harbour to contain, had anchored between the city of Castanæa and the promontory of Sepias, on the coast of Thessaly. The first line of their fleet was sheltered by the coast of Thessaly; but the other lines, to the number of seven, rode at anchor, at small intervals, with the prows of the vessels turned to the sea. When they adopted this arrangement the waters were smooth, the sky clear, the weather calm and serene; but on the morning of the second day after their arrival on the coast, the sky began to lower, the appearance of the heavens grew threatening and terrible; a dreadful storm succeeded; raged for three days with unabating fury, and destroyed 400 galleys, besides a vast number of store-ships and transports. However, 800 ships of war, besides innumerable vessels of burden, sailed into the Pegasean bay and anchored in the road of Aphete, directly opposite to the harbour of Artemisium. The Grecians had posted sentinels on the heights of Eubœa, to observe the consequences of the storm, and to watch the motions of the enemy. When informed of the disaster which had befallen them they poured out a joyful libation, and sacrificed, with pious gratitude, to 'Neptune the Deliverer.' The Persians, however, having recovered from the terrors of the storm, prepared for battle; and, as they entertained not the smallest doubt of conquering, they detached 200 of their best sailing vessels round the isle of Eubœa, to intercept the expected flight of the enemy through the narrow Euripus. About sunset the Grecian fleet approached in a line, and the Persians met them with the confidence of victory, as their ships were still sufficiently numerous to surround those of their opponents. At their first signal the Greeks formed into a circle, at the second they began the fight. Though crowded into a narrow compass, and having the enemy on every side, they soon took thirty of their ships, and sunk many more. Night came on, accompanied with an impetuous storm of rain and thunder; the Greeks retired into the harbour of Artemisium; the enemy were driven to the coast of Thessaly. By good fortune however, rather than by design, the greatest part of the Persian fleet escaped immediate destruction, and gained the Pegasean bay; but the ships ordered to sail round Eubœa met with a more dreadful disaster. They were overtaken by the storm, after they had ventured farther from the shore than was usual with the wary mariners of antiquity. Clouds soon intercepted the stars, by which alone they directed their course; and after continuing during the greatest part of the night the sport of the elements, they all perished miserably amidst the shoals and rocks of an unknown coast. The morning arose with different prospects and hopes to the Persians and Greeks. To the former it discovered the extent of their misfortunes; to the latter it brought a reinforcement of fifty-three Athenian ships. Encouraged by this favorable circumstance, they determined again to attack the enemy at the same hour as on the preceding day, because their knowledge of the coast, and their skill in fighting their ships, rendered the dusk peculiarly propitious to their designs. At the appointed time they sailed towards the road of Aphete; and having cut off the Cilician squadron from the rest, totally destroyed it, and returned at night to Artemisium. The Persian commanders being deeply affected with their repeated disasters, but still more alarmed at the much dreaded resentment of their king, determined to make one vigorous effort for restoring the glory of their arms. By artful stratagem, and under favor of the night, the Greeks had hitherto gained many important advantages. It now belonged to the Persians to choose the time for action. On the third day, at noon, they sailed forth in the form of a crescent, still sufficiently extensive to infold the Grecian line. The Greeks, animated by former success were averse to decline any offer of battle; yet it is probable that their admirals, and particularly Themistocles, would much rather have delayed it to a more favorable opportunity. Rage and resentment supplied the defect of the barbarians in skill and courage. The battle was longer, and more doubtful, than on any former occasion; many Grecian vessels were destroyed, five were taken by the Egyptians, who particularly signalised themselves on the side of the barbarians, as the Athenians did on that of the Greeks. The persevering valor of the latter at length prevailed, the enemy retiring, and acknowledging their superiority, by leaving them in possession of the dead and the wreck. But the victory cost them dear; since their vessels, particularly those of the Athenians, were reduced to a very shattered condition; and their great inferiority in the number and size of their ships made them feel more sensibly every diminution of strength.'

Artemisium, a town of Œnotria, now called St. Agatha, in Calabria, on the river Pisaurus, or la Foglia, eight miles distant from the Tuscan sea.

Artemisium, an ancient town of Spain, on the sea-coast of Valencia, called also Dianium, and now Denia, possessed by the Contestani.

ARTEMON, a Syrian who resembled Antiochus, king of Syria, so exactly, that by the contrivance of his queen Laodice, he personated him after his death, and thus obtained the kingdom.

Artemon, the founder of the sect of Artemonites, a sect of Unitarians who flourished about the year 210.

ARTEMUS, a promontory of Valencia, called also Cabo St. Martin, and Punta del' Emperador.

ARTENNA, in ornithology, the name of a water-bird, of the size of a hen, of a brownish color on the back, and white on the belly; having a crooked bill, and its three fore toes connected by a membrane, but the hinder one loose. It is found on the island Tremiti, in the Adriatic sea, and is supposed to be the avis Diomedis of the ancients.

ARTERIA Aspera, Arteria Bronchialis, &c. See Anatomy, Index.

Arteria Venosa, a name given by the ancients to the pulmonary vein, on the erroneous supposition of its being an air-vessel, and that it served for the conveyance of the vital aura from the lungs to the heart.

ARTERIACA, Arteriacs. Medicines for disorders of the trachea, and the voice. Arteriacs are reduced by Galen into three kinds: 1. Such as are void of acrimony, serving to mollify the asperities of the part; such as gum tragacanth, aster samias, starch, milk, &c. 2. Those of an acrimonious quality, whereby they stimulate even the sound parts; such as honey, turpentine, bitter almonds, iris root, &c. 3. Those of an intermediate kind, soft and mild, yet detergent; such as butter, and preparations of almonds, honey, &c.

ARTERIOSA Vena, or Arterial Vein, a denomination given to the pulmonary artery.

ARTERIOSUS Canalis, a tube in the heart of the fœtus, which, with the foramen ovale, serves to maintain the circulation of the blood, and to divert it from the lungs.

ARTERY, ARTERIAL. *Αρτηρια, spiritus semita,* according to Pliny and Cicero. The moderns have a more accurate knowledge of the human body than this bare and inadequate definition of the ancients affords. See ANATOMY for a complete view of the arteries.

> Universal plodding prisons up
> The nimble spirits in the *arteries.*
> *Shakspeare. Love's Labour Lost.*

> Had not the Maker wrought the springy frame;
> The blood, defrauded of its nitrous food,
> Had cool'd and languished in the *arterial* road.
> *Blackmore.*

> As this mixture of blood and chyle passeth through the *arterial* tube, it is pressed by two contrary forces; that of the heart driving it forward against the sides of the tube; and the elastic force of the air, pressing it on the opposite sides of those air-bladders, along the surface of which this *arterial* tube creeps.
> *Arbuthnot.*

ARTHEL, in law, something cast into a court, in Wales, or its marches, whereby the court is letted or discontinued for the time. The casting of arthel is prohibited, 26 Hen. VIII. cap. 6.

ARTHINGTON (Henry), a fanatical gentleman of Yorkshire, who, towards the end of queen Elizabeth's reign, engaged in treasonable practices against the government, with Edward Coppinger a servant of the queen's, and one Hacket, whom, in their fanaticism they styled 'king of Europe!' Supposing themselves to be inspired, Coppinger styled himself the 'prophet of mercy,' and Arthington the 'prophet of judgment!' Arthington accordingly wrote and published his prophecies, wherein were intermingled some severe reflections against the lords of the privy council, the judges, &c. They were at last all three apprehended in July, 1591; when Coppinger became quite deranged, and never recovered his senses. Hacket was tried, condemned, and executed; and Arthington hearing of this, wrote a submissive letter to the lords of council, which, after some time, procured him the queen's pardon. He died with the character of an honest but weak man.

ARTHRITICA, in botany, a name given by some to the primrose, and by others to the ground pine.

ARTHRITICAL, ARTHRIT'ICK. Αρθριτις, pain or disease which attacks the joints, from *αρθρον,* a joint.

> Frequent changes produce all the *arthritick* diseases.
> *Arbuthnot.*

> Serpents, worms, and leaches, though some want bones, and all extended articulations, yet have they *arthritical* analogies; and, by the motion of fibrous and musculous parts, are able to make progression.
> *Brown's Vulgar Errors.*

> Unhappy! whom to beds of pain
> *Arthritic* tyranny consigns;
> Whom smiling nature courts in vain,
> Though rapture sings and beauty shines.
> *Johnson's Ode on Spring.*

ARTHRITIS; from *αρθρον,* a joint; any distemper that affects the joints, but the gout particularly.

ARTHRITIS PLANETICA, ARTHRITIS VAGA, the wandering gout, that gives pain sometimes in one limb, and sometimes in another.

ARTHRODIA, in anatomy, a species of articulation, wherein the flat head of one bone is received into a shallow socket in the other. The humerus and scapula are joined by this species of articulation. See ANATOMY, Index.

ARTHRODIA, in natural history, a genus o. imperfect crystals, found always in complex masses, and forming long single pyramids, with very short and slender columns.

ARTHRODIA, in zoology, a class of animalculæ, containing those with visible limbs.

ARTHRON; *αρθρον,* Greek; a joint, or connection of bones proper for motion.

ARTHROSIS, in anatomy, a juncture of two bones designed for motion; called also articulation. See ARTHRODIA.

ARTHUR, the celebrated hero of the Britons, is said to have been the son of Uter, named Pendragon, king of Britain, and to have been born in 501. His life is a continued scene of wonders. He killed 470 Saxons with his own hand in one day; and after having subdued many mighty nations, and instituted the order of the knights of the Round Table, died A. D. 542, of wounds which he received in battle. The most particular detail of his story and his exploits is that given by Geoffrey of Monmouth; but his history is so blended with the marvellous and the extravagant, that not only the truth of the whole, but even the reality of Arthur's existence, has been called in question. The ingenious Mr. Whitaker however believes in his institution of the celebrated order of the round table, as also that it was the origin of others of the like kind on the continent.

ARTHUR'S SEAT, a high hill in the neighbourhood of Edinburgh, said to have been so denominated from a tradition that king Arthur surveyed the country from its summit, and had also defeated the Saxons in its neighbourhood. This hill rises by a steep and rugged ascent, till it terminates in a rocky point near 700 feet from the base, being more than double the height of the cross on the top of St. Paul's, London, which is 340 feet. On the south it is in many parts a perpendicular rock, composed of basaltic pillars, regularly pentagonal or hexagonal, about three feet in diameter, and from forty to fifty feet in height. Contiguous upon the west, and partly connected with it at the base, are Salisbury crags, of inferior height but exhibiting an appearance equally singular and grand. They present to the city an awful front of broken rocks and precipices, forming a sort of natural amphitheatre of solid rock; and backward from the craggy verge above, the hill forms an extensive irregular slope, the surface affording pasture to numerous flocks of sheep. The crags, beside ores, spars, rock-plants, and here and there it is said some precious stones, afford an inexhaustible supply of granite for paving the streets, &c. In quarrying a part of the crags has been worn down into a spacious shelf, having the appearance of a lofty terrace, and stretching a considerable length. From hence is a near and distinct prospect of the city with its environs and the adjacent country. But from the pinnacle called Arthur's Seat the view is more noble and extensive. The traveller may here sit and survey at his ease the centre of the kingdom, besides having a complete view of Edinburgh and its castle. on which he looks down as if seated among the clouds. In a word, the German ocean, the whole course of the Forth, the distant Grampians, and a large portion of the most populous and best cultivated part of Scotland, form a landscape sublime, various and beautiful. The denomination of this hill, derived as above, has been adduced as an argument against those who dispute the existence of the British Arthur. That derivation, however, though probable, is not without uncertainty. For Arthur's Seat is said to be derived, or rather corrupted, from A'rd Seir, 'a place or field of arrows,' where people shot at a mark: and this not improbably; for among these cliffs is a dell or recluse valley, where the wind can scarcely reach, now called the Hunter's bog, the bottom of it being a morass. The adjacent craggs are supposed to have taken their name from the earl of Salisbury, who, in the reign of Edward III. accompanied that prince in an expedition against the Scots; though, according to others, the genuine derivation, like that of Arthur's seat, is from a Celtic word also corrupted.

ARTICHOKE, in botany. See Cinara.

ARTICLE, *v.* & *n.*
Arti'culate, *v.* & *adj.*
Arti'culately,
Articula'tion.
} Lat. *articulus*, a diminutive of *artus*, a joint. To enter into, draw up or state particulars, to make terms. To articulate is to pronounce each portion of a sentence distinctly.

Prospero. Hast thou, spirit,
Performed to point the tempest that I bad thee.
Ariel. To every *article*. *Shakspeare. Tempest.*

Henry's instructions were extreme curious and *articulate*, and in them more articles touching inquisition, than negotiation; requiring an answer in distinct articles to his questions. *Bacon.*

In speaking under water, when the voice is reduced to an extreme exility, yet the *articulate* sounds, the words, are not confounded. *Id.*

The first, at least, of these I thought deny'd
To beasts; whom God, on their creation day,
Created mute to all *articulate* sound. *Milton.*

Antiquity expressed numbers by the fingers on either hand. On the left they accounted their digits and *articulate* numbers unto an hundred; on the right hand, hundreds and thousands. *Brown's Vulgar Errors.*

If it be said, God chose the successor, that is manifestly not so in the story of Jephtha, where he *articled* with the people, and they made him judge over them. *Locke.*

By *articulation* I mean a peculiar motion and figure of some parts belonging to the mouth, between the throat and lips. *Holder.*

All the precepts, promises, and threatenings of the gospel, will rise up in judgment against us; and the articles of our faith will be so many *articles* of accusation; and the great weight of our charge will be this, That we did not obey the gospel, which we professed to believe; that we made confession of the Christian faith, but lived like Heathens. *Tillotson.*

You have small reason to repine upon that *article* of life. *Swift.*

The dogmatist knows not by what art he directs his tongue, in *articulating* sounds into voices. *Glanville.*

In the mean time they have ordered the preliminary treaty to be published, with observations on each *article*, in order to quiet the minds of his people. *Steele.*

Article, in grammar, is a particle used in most languages for the declining of nouns, and denoting their several cases and genders. The use of them chiefly arises in languages that have no different terminations to express the different circumstances of nouns. The Latins have no articles; but the Greeks, and most of the modern languages, have had recourse to them for fixing and ascertaining the vague signification of common and appellative names. Many have been the controversies among grammarians upon the use and meaning of these words. Mr. Harris, whose knowledge was derived from the Greek language and Greek grammarians, and whose principles are contradicted by the slightest acquaintance with the Teutonic and Arabic, leads us through many a maze; and we might have wandered till this moment, if Mr. Tooke, in his observations on the word *that*, in his Epea Pteroenta, had not pointed out to us the open and straight road upon this subject. In the English language we call the words *a* and *the* articles; the Germans have *ein* and *der;* the French *un* and *le;* the Greeks ὁ; the Hebrews ה: but the unfortunate Latins are said to be without these joints and pegs in speech. But if one language is without them, they are, it is evident, not essential to language; and it will be found difficult to make such a definition as shall exclude a variety of words, such as *hic*, *this*, *that*, &c. from making a part of this division. In the languages above-mentioned the precise meaning of the words *the*, *der*, *le*, ὁ, and ה, cannot at first sight be ascertained. The English word *a* points obscurely to its meaning, but the German *ein* and the French *un* clear the road for investigation. They are to be found continually applied to substantives, and mean *one*. If a thing is generally reported, we say in English, 'they say,' meaning a great number say so: and so in French it is *on dit*, or *unus dicit*, 'one person says so,' meaning more than one person by an ellipsis very common in that language: in German it is *man sagt*, by man, meaning man in general. We have thus found, that in two languages one of the articles is merely a word of number. Probably it may be so in English; *a* may mean *one*, or it is an abbreviation of *any*. By trying the two senses it is evident that *any* cannot be applied in the room of *a*, but that *one* always can: and hence we might conclude that *a* and *an* are only other words for *one*, and answer to the German *ein*.

The article *the*, as it is called, may not discover itself so easily. Yet let us try the same analogy, for the etymology of it is not ascertained. *The* answers to *der* of the Germans, and *le* of the French: but what is *le?* the *ille* of the Latins; and hence we may reasonably presume that our word *the* is no more an article than *ille*, and in fact that it comes from some adjective of the same signification. Let us try by etymology. In German we have *der*, *die*, *das;* which was anciently *ther*, *thia (thio thiu) thaz*, and in the plural *thie (thier)*. This looks very much like our *the*. In the Anglo-Saxon we find *sa*, *seo*, *that*: in Islandic, *sa*, *su*, *that*: in Gothic, *sa*, *so*, *thata*: in Hebrew, זות, זו, זה: etymologists perhaps will not be displeased at our making the words זה and *the* proceed from the same original; and we shall not be afraid of exposing ourselves to the laughter of critics, if we refer the Doric τηνος to the same stock. If we are right in our conjectures, the word *the* is as much a pronoun as the *ille* of the Latins; but, if persons choose to have a distinct class of words under the name of articles, we may say that the English has two, *a* and *the*, which 'serve to define and ascertain any particular object, so as to distinguish it from the other object of the general class to which it belongs.'

Father Buffier distinguishes a third kind of articles in French, which he calls intermediate or partitive, serving to denote part of the thing expressed by the substantives they are added to; as, *des sçavants ont cru*, 'some learned men have supposed;' I want *de la lumiere*, 'some light.' The use and distinction of the definite and indefinite articles *le* or *la*, and *de* or *du*, make one of the greatest difficulties in the French language; as being entirely arbitrary, and only to be acquired by practice.

The most philosophical and probable account is that which has been so ably illustrated by the learned bishop Middleton; viz. that it is neither more nor less than the demonstrative or relative pronoun, for both were originally the same. The article, together with its adjunct, forms in fact a proposition, in which the participle of existence is either expressed or understood, and which involves a relation to something before said by the speaker, or which is suppposed to pass in the mind of the speaker. Thus, *γέρων* signifies generally 'old man;' but *ὁ γέρων* is equivalent to ὃ, *γέρων ὢν*, where the pronoun ὃ, 'this,' implies that the old man now spoken of has been mentioned before, or that he is in some way or other known to the hearer or the speaker.

Article, Articulus, in anatomy, a joint, or juncture, of two or more bones of the body.

Article, in arithmetic, sometimes signifies the number 10, or any number justly divisible into ten parts, as 20, 30, 40, &c.

Article of Faith is by some defined a point of Christian doctrine, which we are obliged to believe as having been revealed by God himself, and allowed and established as such by the church. The thirty-nine articles were founded, for the most part, upon a body of articles compiled and published in the reign of Edward VI. They were first passed in the convocation, and confirmed by royal authority in 1562. They were afterwards ratified anew in the year 1571, and again by Charles I. The law requires a subscription to these articles of all persons ordained to be deacons or priests, 13 El. cap. 12; of all clergymen inducted to any ecclesiastical living, by the same statute; and of licensed lecturers and curates, 13 El. cap. 12 and 13, and 14 Ch. II. cap. 4; of the heads of colleges, of chancellors, officials and commissaries, and of schoolmasters. By 1 William III. cap. 10. dissenting teachers are to subscribe to all except the thirty-fourth, thirty-fifth, and thirty-sixth, and part of the twentieth, and in the case of Anabaptists, except also part of the twenty-seventh; othewise they are exempted from the benefits of the act of toleration. See Church of England.

Articles of the Clergy, Articuli cleri, are certain statutes touching persons and causes ecclesiastical, made under Edw. II. and III.

Articles of Lambeth were nine articles on the subject of predestination, and the limitation of saving grace, which were drawn up by archbishop Whitgift, and recommended to the attention of the students of Cambridge, in consequence of some disputes which were raised in the university at that time on the above-mentioned points. They were, however, merely declaratory of the doctrines of the church of England, and were not imposed as of public authority.

Articularis Nervus. See Anatomy, Index.

Articulate Sounds are such as express the letters, syllables, or words, of an alphabet or language: such are formed by the human voice, and by some few birds, as parrots, &c.

Articulated Libel, libellus articulatus, in law, that wherein the parts of a fact are set forth to the judge in short, distinct articles.

Articulation, in anatomy. See Anatomy, Index.

Articulation, in botany, is the connexion of parts that consist of joints or knees, such as the pods of French honey-suckles, which, when ripe, divide into so many parts as there are knees or joints; also those parts of plants which swell into nodes or joints, and which usually send forth branches.

Articulation, in grammar, a distinct pronunciation of words and syllables.

ARTIFICERS, among the Romans, had their peculiar temples, where they assembled and chose their own patron, or advocate, to defend their causes; they were exempted from all personal services. Taruntenus Paternus reckons thirty-two species of artificers, and Constantine thirty-five, who enjoyed this privilege. Artificers were held a degree below merchants, and argentarii or money-changers, and their employment more sordid. Some deny, that in the earliest ages of the Roman state, artificers were ranked in the number of citizens: others, who assert their citizenship, allow that they were held in contempt, as being unfit for war, and so poor that they could scarcely pay any taxes. For which reason they were not entered among the citizens in the censor's books; the design of the census being only to see what number of persons were yearly fit to bear arms, and to pay taxes towards the support of the state. In almost all ages, till the present, and under most forms of government, artificers have been too little respected. By means of the arts, the minds of men are engaged in inventions beneficial to the whole community; and thus prove the grand preservative against that barbarism and brutality, which ever attend indolence and induce stupidity. Ramazini has a treatise on the diseases of artificers.

ARTIFICIAL Day, the time between the sun's rising and setting in any position of the hemisphere.

Artificial Lines, on a sector or scale, are lines so contrived as to represent the logarithmick lines and tangents; which, by the help of the line of numbers, solve, with tolerable exactness, questions in trigonometry, navigation, &c. Chambers

Artificial Music, that which is according to the rules of art; or executed by instruments invented by art. It is also used, in another sense, for some artful contrivance in music; as when a piece is sung in two parts; one of which is by B molle, or flat and the other by B sharp.

ARTILLERY.
(Ancient)

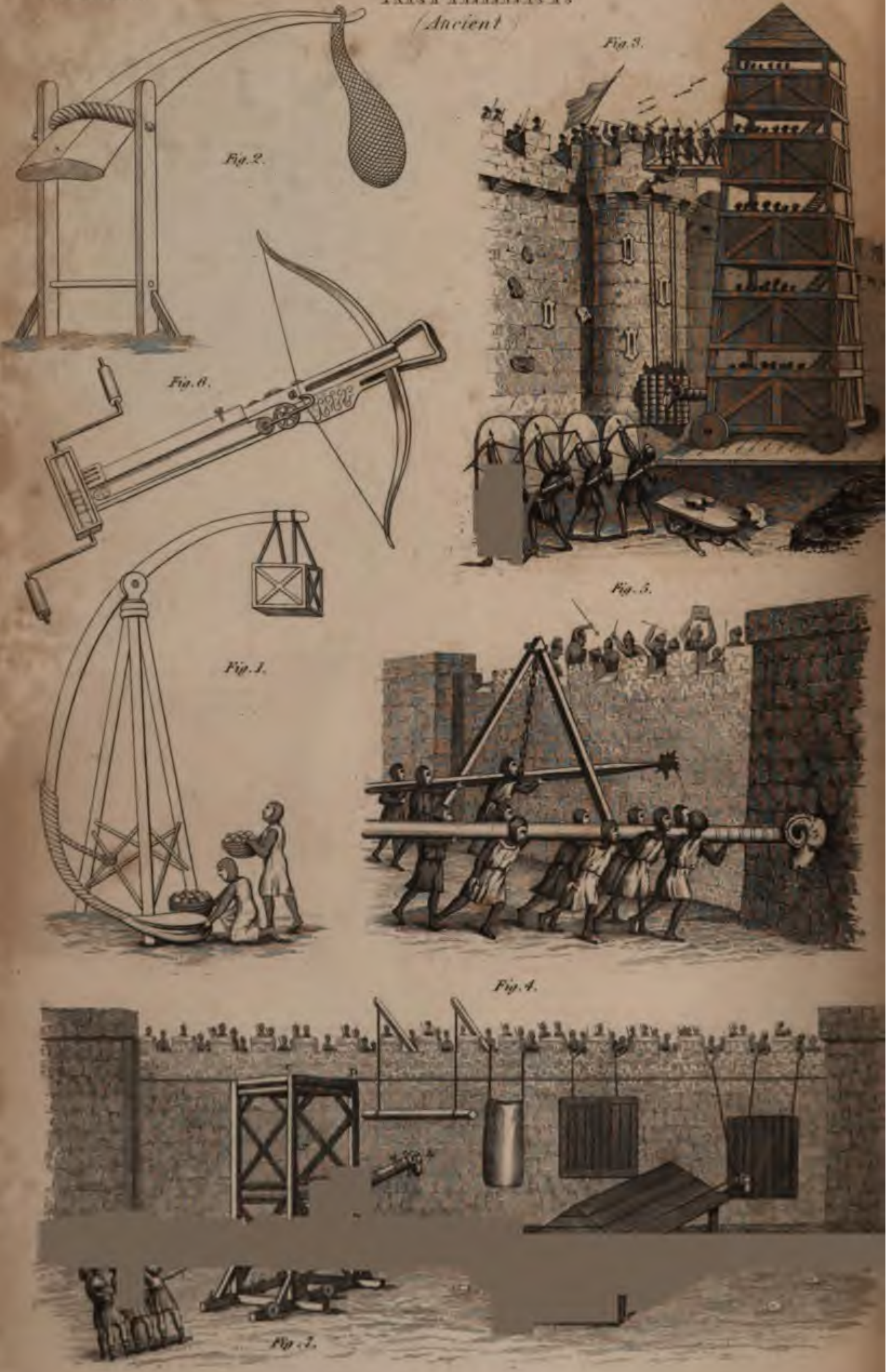
Fig. 2.
Fig. 3.
Fig. 6.
Fig. 5.
Fig. 1.
Fig. 4.
Fig. 2.

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J. Storey sculp.

ARTILLERY.

ARTIL'LERY. Fr. *artillerie*. Of doubtful origin.

> Have I not heard great ordnance in the field?
> And heav'n's *artillery* thunder in the skies?
> *Shakspeare.*

> I'll to the tower with all the haste I can,
> To view th' *artillery* and ammunition. *Id.*

> And Jonathan gave his *artillery* unto his lad, and said unto him; Go, carry them unto the city.
> 1 *Samuel.*

> As when two black clouds
> With heaven's *artillery* fraught, come rattling on
> Over the Caspian, then stand front to front
> Hov'ring a space, till winds the signal blow
> To join their dark encounter in mid air.
> *Milton's Paradise Lost*, b. ii.

> Upon one wing the *artillery* was drawn, being sixteen pieces; every piece having pioneers, to plain the ways. *Hayward.*

> He that views a fort to take it,
> Plants his *artillery* against the weakest place.
> *Denham.*

ARTILLERY, in its general sense, denotes, 1. The offensive apparatus of war, particularly of the missile kind. Among the French the term was anciently appropriated to archery. In its modern signification it denotes certain firearms mounted on carriages and ready for action, with their balls, bombs, grenades, rockets, &c. 2. In a more extensive meaning, it includes the means which facilitate their motion and transport, the vehicles over which they traverse rivers, every thing, in short, necessary to them, or that belongs to a train of artillery. 3. In a sense still more extensive, the word comprehends the men and officers destined for the service of the artillery. 4. By the term artillery is likewise understood the science which the officers of artillery ought to possess.

SECT. I.—OF ANCIENT MISSILES AND MILITARY ENGINES.

The missiles of the ancients were of three kinds, viz. on the principle of the cross-bow, the sling, and the recoil of twisted ropes. The first sent forward darts and sometimes combustible arrows; the second was the balista kind, hereafter described; the third acted like the boy's bone bow, which by means of a wooden lever and a twisted string ejects a plum-stone. Dr. Meyrick has had the good fortune to meet in an ancient manuscript with actual delineations of the leading kinds of these engines used in the middle ages. The balista seems only to have been a large beam, rather crooked, resting at about two-thirds of its length on a forked support; if of three legs, then called trepied. Plate, ANCIENT ARTILLERY, fig. 1. At the long end was a great pear-shaped bag, tied to the beam by a stout rope. At the short end was a large box full of stones. The long end being suddenly released, flung upon the enemy the contents of the bag, through being jerked up by the great weight of the stone box. The onager, fig. 2, threw a like bag of stones, but there was no stone-box, the beam being impelled by its position between twisted ropes inclined to recoil. Besides stones, were also used balls of earth, probably baked pelotes, corrupted into pellets and bullets. It will be sufficient therefore to enumerate shortly the machines, though it is to be recollected, that ancient authors are perpetually confounding the appellations. The arbalist is described in 1342 as a large cross-bow, furnished with a hundred gogions, or balls, and grapple to draw it up.

The *balista* is said to be a Phœnician invention for throwing huge stones, confounded sometimes with the catapult, which threw darts, a Syrian contrivance, conveyed to the Syracusans, whence it was brought into Greece by Philip of Macedon. Accounts of the construction vary, but the cross-bow principle of action seems the most probable. The scorpio was a smaller kind of catapult. In the middle ages, besides the balista, catapult, onager, and scorpion, Grose mentions the mangona, and its diminutive mangonel, similar to the balista. The trebuchet or tripgetis, for throwing stones, which seems to have been the same as the trepied, before mentioned, though Dr. Meyrick says the term trebuchet, appears to imply a military engine, which ejected its ammunition from a trap-door, trebocchetto. The petiary, matafunda, bugles or bibles, couillart, and war-wolf (in one sense) also machines for ejecting stones. The bricolle, carreaux or quarrels, and the espringal, calculated for throwing large darts, called muchettæ; and sometimes viretons, i. e. arrows with the feathers put diagonally so as to occasion them to turn in the air, but it was not limited to darts; for according to Dr. Meyrick, v. ii. p. 53, in 1342 the gates and towers of Norwich were furnished with thirty espringolds for casting great stones, and to every espringold a hundred gogions or balls fastened up in a box, with ropes and other accoutrements belonging to them; which illustrates the construction before given. The robinet and mate-griffon (i. e. destroyer of the Greeks) threw both darts and stones.

The *manu-balista*, or cross bow, supposed to be of Sicilian and Cretan origin, was perhaps the most important machine of this kind, and introduced into Europe by the Crusades. It was known in England, at least for use in the chase, as early as the time of the Conquest. Its application to warlike uses (not its introduction) by Richard I. is well supported; it was used in Italy in 1139. A legionary soldier appears on an ancient seal endeavouring to bend the arcubalist with his foot. Five years earlier, mention is made of turni balisterii, or the arbaleste-a-tour, that drawn up by a turn; and in 1320, of the balista grossa de molinellis, or one wound by a moulinet or windlass, see fig. 6, and the balista grossa de arganellis, i. e. one furnished with tubes for ejecting the Greek fire. The cross-bows used in the reign of Henry VII. were of two kinds; the latch, with its wide and thick bender, for quarrels, and the prodd for bullets. The stock of the former was short and straight, not much exceeding two feet, and the bow was bent by the windlass or moulinet.

Of the important *battering ram* Pliny and others have made Epeus the inventor, during the siege of Troy; but as it is not mentioned by Homer, nor any Greek writer, Vitruvius and Tertullian more probably assign the invention to Pephasmenon, a Tyrian, in the army of Carthage, during the siege of Cadiz. There were three kinds of rams; one suspended, fig. 5; the second running upon rollers, fig. 3; the third carried by the men who worked it, fig. 5. At Haguenau, and Morviedro, the ancient Saguntum, are the remains of two: one is topped with a strong head of iron, square and of one piece; the other consists of three pieces, has a ram's head, and is similar to one on the arch of Severus. The ram was used in the middle ages; and Sir Christopher Wren, in throwing down old walls, found no machine equal to it, particularly in disjointing the stones. The momentum of one, twenty-eight inches diameter, 180 feet long, with a head of a ton and a half weighed 41,112 lbs. and worked by a thousand men, was about equal to a point-blank shot from a thirty-six pounder.

Hardly, perhaps, to be called artillery, but materially assisting their operations were the ancient *musculus* or *testudo* a covered machine, probably the subsequent sow, a very low shed, long and very sharp roofed; used to advance to the wall, and overturn it by sap. The pluteus, a machine covered with ozier work and hides, running upon three wheels, one in the middle, and two at the extremities. The cat, also a covered shed, occasionally fixed on wheels, and used for protecting soldiers employed in filling up the ditch, preparing the way for the movable tower, mining the wall,&c. Some of these cats had crenelles and chinks, from whence the archers could discharge their arrows. These were called castellated cats; and sometimes under cover of this machine, the beseigers worked a small kind of ram; fig. 4. Dr. Meyrick, from an ancient illumination, has engraved one of these, called the chaschateil or cat castle. It resembles in form a modern four-post bedstead upon wheels. A miner is working under it with a pick-axe. And to the same purpose the vinea, another shed, was applied.

The *belfragium* or *belfroi*, was a tower with stories, moved up to the walls. A cat, made of osier twigs and leather, and covered with planks, was used to protect those who filled up the ditches preparatory to wheeling upon them the belfries; from this use of the cat, was derived the French word eschaufaux, an elevated floor, and subsequently the English word scaffold. Elsewhere Dr. Meyrick says, the catti versatiles, were chats faulx furnished with drawbridges. The chief belfries were called brestachiæ or brestaches. William de Breton says, he caused to be made double brestaches in seven different places. These were wooden castles, very highly fortified, surrounded with double quadrangular fosses, at a proportionate distance from each other, with drawbridges thrown across them, and he had not only these filled with armed men, but the interior surface of each foss, and thus he surrounded the besieged by his works. Such wooden castles were also called bastiles. An interesting print of a movable belfroi is given by Grose. It consists of a ground-floor occupied by a ram, and four upper stories by archers and cross-bowmen; the highest story rose above the walls, and from that directly below, a drawbridge was let down, and rested upon the wall; see our fig. 3. Some of these towers used by the early ancients were of amazing magnitude, being with pyramids twenty, fifteen, or ten stages or floors.

The *prickly* cat, or *felis echinata*, was a beam, bristled with oaken teeth, which, being hung at an embrazure, could be let down upon an enemy. For the same purpose was used the fistuca bellica or war-hammer, fitted with curved nails and hooks, and suspended by a chain, to draw up the enemy from below.

Missive wheels were formed of mill-stones joined by an oaken axis, and let down upon besiegers; missive chariots were rolled down an inclined plane, and retained by chains to discharge hot or cold stones. In the middle age the machines were commonly made upon the spot. Hogsheads full of stones were used in the reign of Edward I. as a protecting rampart to defend the workmen in sieges.

SECT. II.—OF MODERN ARTILLERY.

According to Du Cange the word artillery (ars telaria, meaning bows, arrows, and all implements of war,) first occurs in Rymer. Grose is confirmed by Dr. Meyrick in assigning the introduction of it to the fourteenth century.

Cannon called dolia ignivoma, or fire-flashing vessels, in Spain, were known in Italy as early as the year 1351, and were used by our Edward III. They were termed by the French, gunnæ, and appear at first to have been of two kinds—a large one for discharging stones, called a bombard, and a smaller sort for discharging darts or quarrels. In 1377, 1 Richard II. Thomas Norbury was directed to provide from Thomas Restwold of London, two great and two less engines, called cannons, 600 stone shot for the same, and salt-petre, charcoal, and other ammunition, for stores, to be sent to the castle of Bristol. At the first invention of cannon, darts and bolts were shot from them; but, before these, stones were used instead, for, in 1388, a stone bullet, which weighed 195 lbs., was discharged from a bombard called the trevisan.

The *bombard* was so called from the Greek *βομβος*, which expressed the noise it made in the firing. It was a Greek invention, and there is some reason to conceive that gunpowder owed its origin to the same people. At first used only in fire-works amusively, its discovery is involved in obscurity. From a tract on Pyrotechny by Marcus Græcus, Friar Bacon, in 1270, learned that its composition was two pounds of charcoal, one of sulphur, and six of salt-petre, well pulverised and mixed. It was first made in England in the time of Elizabeth. At first it was not corned, but remained in its mealed state. It was then called serpentine powder, Meyrick, v. iii. p. 71. The first bombards were made of bars of iron, strengthened with welded hoops of the same metal. They were short with large bores, and were made with chambers, in imitation of the tubes which ejected the Greek fire. These chambers consisted of the lower half of the cylinder, the upper being open for the admission of the can, or canister, which held the charge, from whence probably arose the term cannon. One of these may be seen in the tower of London, and there is another at Rhodes of the sixteenth century, on its original carriage, and a stone ball to fire from it. It is nineteen feet in length, two feet eight inches in diameter, its calibre two feet, and its thickness four inches. About half the length is of a less diameter, and in this, as in a chamber, was placed the powder, while the ball was in the larger part. The carriage was made of timber, placed lengthways, and cramped together. These bombards were the only kind of cannon employed in the fourteenth century, and were of the howitzer kind, in use before mortars. After this invention of bombs, that of carcases of different kinds soon followed. The former, according to Strada, took place in 1588. Grenades are said to have been first used in 1594 in which year the howitzer was invented by the Germans. The bomb being intended to beat down buildings in its fall, or to break and destroy every thing around it, by the pieces of broken iron scattered in all directions by its explosions, the end proposed by the carcase and grenade was to burn the town by means of fire-balls. The petard for forcing gates was invented in France, a short time before the year 1579, and soon after introduced into England.

The term bombard generally designates battering guns and mortars; but the word is also applied to lighter cannon. Accordingly Dr. Meyrick calls a cannon engraved by Strutt, a bombard on a carriage, light in proportion to the bulk of the piece. Its trail consists of a prolongation of the cascabale, which rests on the ground, a block of wood serving as a quoin for the purpose of depression. Admitting that cannon were not used in the field till the fifteenth century, this gun, for it is very small, is the kind to which Froissart alludes, when he mentions two hundred carts loaded with cannon and artillery; cannonades with bars of iron and quarrels headed with brass, and cannon mounted on walls and battlements. The balls were of stone adapted to the calibre. In 1434 it is said that the English had many kinds of projectiles, 'cannons, culverines, and other vuglaires,' more properly vulgaires, the ordinary kind. The scorpion was another sort. In an illuminated copy of the Roman de la Rose, done at the commencement of the reign of Edward IV. 1461, is the delineation of an iron cannon. The piece is placed in a kind of trough, or bed of wood, which is continued to the earth, not unlike a modern horse-artillery trail. Grose very properly says, that most of the earliest cannons were mere cylinders, fixed on sledges and being often composed of iron bars, iron plates rolled, or even jacked leather hooped, could be fired, because they were loaded by chambers fixed in at the breech. At this time they were generally purchased from abroad; and though Henry VII. and VIII. had Flemish gunners to teach the art, yet they did not understand it upon mathematical principles; and in the sixteenth century the ordnance rarely made more than one discharge, the cavalry being able to charge them before they could load again. Aliens were employed in 1543 in casting great brass ordnance, though one John Owen was said to have so done in 1521. In 1626, 2 Charles I. one Arnold Rotespen had a patent for making guns in a manner before unknown in this kingdom.

Culverines were an early denomination of a species of large cannon; and when the distinction between battering-pieces (all above twelve pounders) and field-pieces commenced, according to Dr. Meyrick, temp. Henry VIII. the appellations were numerous. These names were derived from the tubes which had been used to eject the Greek fire, being fashioned so as to represent the mouths of monsters. The basilisk, the largest, shot stones of 200 pounds weight. It was so denominated from a basilisk sculptured upon it. The shot in this reign consisted of iron, lead, and stone balls; and ladles and sponges were used. Different proportions were given by various nations to pieces of the same denomination; but the following table of Ordnance in the reign of Elizabeth, applies in the main to the times immediately preceding:

Denomination.	Pounders.	In. Bore.
Cannon Royal	66	8½
Cannon	60	8
Cannon Serpentine . . .	53½	7
Bastard Cannon . . .	41	7
Demi-cannon	33	6¾
Cannon Petro'	24	6
Culverin	17½	5½
Basilisk	15	5
Demi-culverin	9½	4
Bastard Culverin . . .	5	4
Sacar	5½	3½
Minion	4	3½
Faulcon	2	2½
Falconet	1½	2
Serpentine	¾	1½
Rabinet	½	½

The change introduced in the military art by the modern artillery, Dr. Smith observes, has enhanced greatly both the expense of exercising and disciplining any particular number of soldiers in time of peace, and that of employing them in time of war. Both their arms and ammunition are become more expensive. A musket is a more expensive machine than a javelin or a bow and arrows; a cannon or a mortar than a balista or a catapulta. The powder which is spent in a modern review, is lost irrecoverably, and occasions a very considerable expense. The javelins and arrows which were thrown or shot in an ancient one, could easily be picked up again, and were besides of very little value. The cannon and the mortar are not only much dearer, but much heavier machines than the balista or catapulta, and require a greater expense not only to prepare them for the field but to carry them to it. As the superiority of the modern artillery too over that of the ancients is very great, it has become much more difficult, and consequently much more expensive, to fortify a town so as to resist, even for a few weeks, the attack of that superior artillery. In modern war, the great expense of fire-arms gives an evident advantage to the nation which can best afford that expense; and consequently to an opulent and civilised, over a poor and barbarous nation. In ancient times, the opulent and civilised found it difficult to defend themselves against the poor and barbarous nations. In modern times, the poor and barbarous find it difficult to defend themselves against the opulent and civilised. The invention of fire-arms, therefore, an invention, which at first sight appears to be so pernicious, is certainly favorable, both to the permanency and to the extension of civilisation. And, on the whole, the invention of gun-powder and modern artillery may be said to have saved the effusion of human blood. Equestrian engagements (the principles on which cavalry act being nearly the same in every age,) are still similar in circumstances to those which appear so extraordinary in the battles of antiquity.

The present artillery of Great Britain is admitted to be the most perfect force of that description in Europe. It was until recently divided into the artillery of the park, the horse artillery, and the battalion guns, viz. all the light pieces of ordnance attached to regiments of the line. This latter description, however, has been discontinued of late, and brigades of foot and horse now comprehend the whole of our regular artillery.

A brigade of foot artillery has either five medium 12-pounders and a heavy 5½-inch howitzer; five 9-pounders and ditto; five long 6-pounders and ditto; five light 6-pounders and a light 5½-inch howitzer; or six 3-pounders when acting in a mountainous district. In the late war the 9-pounders were more generally used, as best opposed to the 8-pounders of the French army. The guns and howitzers are accompanied by ammunition cars, upon a new principle. To every brigade is a forge cart, a camp equipage waggon, and sparegun carriage, with spare wheels, and tools for a wheeler, collar-maker, and carriage-smith. The proportioning of field and battering ordnance, for foreign service, is a business of great importance, from the knowledge which is requisite to fix upon all the numerous articles to accompany the service, and the method to be pursued in equalising, arranging, and disposing of the guns, ammunition, and stores. No certain criterion can ever be established as to the proportion of artillery to be sent upon any expedition, as it must depend entirely upon the nature of the service; and great changes are generally made to suit the ideas of the officer who is to command the army, and also those of the officer of artillery, who may be selected to accompany it. But two brigades of field artillery to a division of an army consisting of 6000 men, may be considered a good proportion, independent of the reserve park.

A troop of British horse artillery has generally five 6-pounders and one light 5½-inch howitzer. The French have generally 8-pounders and a 6-inch howitzer. Each troop consisting of one captain, one second captain, three subalterns, two staff serjeants, twelve non-commissioned officers, seventy-five gunners, forty-six drivers, six artificers, and one trumpeter, with eighty-six draught horses, and fifty-six riding horses, and six pieces of ordnance, with carriages for the conveyance of ammunition, camp equipage, and stores. Horse artillery was brought into the service of this country by the duke of Richmond in the year 1792. There is a colonel-commandant, two colonels en second, four lieutenant-colonels, and one major, attached to it. The movements of horse artillery are made with great celerity, and it has been found, that they are perfectly adapted to act with cavalry in the field, in their most rapid movements, and are considered as forming an essential addition to the artillery service.

The royal artillery drivers are a corps first formed about twelve years ago, by the duke of Richmond. Previous to the corps being established, the horses and drivers were provided by contract; but, as no reliance could be placed on the service of either men or horses so procured, it was found absolutely necessary to abolish so unmilitary and destructive a plan; and to employ able men well trained to the service. The artillery horses are now kept in the highest condition, the drivers being thoroughly drilled to the manœuvres of artillery, and capable of securing, by rapid movements, advantageous positions in the field. This change arises from the high state of excellence in which the brigades are equipped, and from the artillery men being, in particular cases, mounted upon the cars attending the brigades.

A park of artillery is a sort of movable supernumerary detachment, containing not only light guns, to replace such as may be lost or taken, but 12-pounders, or 18-pounders, with 8 inch howitzers, for the purpose of defending important positions, entrenched posts, &c. breaking down bridges, and conducting sieges. Attached to it also are the reserve officers and men of this service. In expedition service, where disembarkations of artillery take place, the depôt of reserve carriages, ammunition and stores, is usually formed near to the spot where the articles are landed from the ships, and a communication is kept up between the advanced park and the depôt, from whence the articles are forwarded as demanded for the immediate exigencies of the park. See CANNON AND FORTIFICATION.

Regiments of artillery are always encamped, half on the right and half on the left of the park The company of bombardiers (when they are formed into companies. which is the case in almost every nation except England) always takes the right of the whole, and the lieutenant colonel's company the left; next to the bombardiers, the colonels, the majors, &c. so that the two youngest are next but one to the centre or park; the two companies next to the park are the miners on the right, and the artificers on the left. In the rear of, and thirty-six feet from, the park, are encamped the civil list, all in one line.

The following Tables exhibit the latest official regulations for the proportion and disposition of the ammunition attached to the field-pieces of our army.

TABLE I.

Heavy 5½ Inch Howitzer.

Description of carriage.	Where carried.			Round Shot.	Case Shot.			Total Shot.	Cartridges.		
					Heavy.	Light.	Spherical.		2-lb.	10 ozs.	6 ozs.
Patent limber.	Howitzer limber		Off Box	8	2	—	—	10	10	8	—
			Near Box	8	2	—	—	10	10	8	—
	Ammun. Carriage.	Limber	Off Box	11	—	—	—	11	11	11	—
			Near Box	11	—	—	—	11	11	11	—
		Body.	Fore Box	10	2	4	2	18	18	10	4
			Hind Box	10	2	4	2	18	18	10	4
			Total	58	8	8	4	78	78	58	8

Light 5½ Inch Howitzer.

Description of carriage.	Where carried.			Round Shot.	Case Shot.			Total Shot.	Cartridges.		
					Heavy.	Light.	Spherical.		2-lb.	10 ozs.	6 ozs.
Patent limber.	Howitzer limber		Off Box	8	2	—	—	10	10*	8	—
			Near Box	8	2	—	—	10	10	8	—
	Ammun. Carriage.	Limber	Off Box	11	—	—	—	11	11	11	—
			Near Box	11	—	—	—	11	11	11	—
		Body.	Fore Box	12	3	4	2	21	21	12	4
			Hind Box	12	3	4	2	21	21	12	4
			Total	62	10	8	4	84	84	62	8

* These are only 1-lb cartridges.

TABLE II.

Heavy Six-Pounder.

Description of carriage.	Where carried.			Round Shot.	Case Shot.			Total Shot.	Cartridges.		
					Heavy.	Light.	Spherical.		2-lbs.	12 ozs.	2½ ozs.
Patent limber.	Gun limber		Off Box	20	5	—	—	25	25	—	—
			Near Box	20	—	5	—	25	25	—	—
	Ammun. Carriage.	Limber	Off Box	20	5	—	—	25	25	—	—
			Near Box	20	—	5	—	25	25	—	—
		Body.	Fore Box	25	5	5	10	45	35	10	10
			Hind Box	35	—	—	10	45	35	10	10
			Total	140	15	15	20	190	170	20	20
			Total for five guns	700	75	75	100	950	850	100	100

Light Six-Pounder.

Description of carriage.	Where carried.			Round Shot.	Case Shot.			Total Shot.	Cartridges.		
					Heavy.	Light.	Spherical.		2-lbs.	12 ozs.	2½ ozs.
Patent limber.	Gun.		Box	8	—	—	—	8	—*	—	—
			Off Box	16	5	—	—	21	25	—	—
			Near Box	16	—	5	—	21	25	—	—
	Ammun. Carriage.	Limber	Off Box	16	4	—	—	20	20	—	—
			Near Box	16	—	4	—	20	20	—	—
		Body.	Fore Box	25	5	5	10	45	35	10	10
			Hind Box	35	—	—	10	45	35	10	10
			Total	132	14	14	20	180	160	20	20
			Total for five guns	660	70	70	100	900	800	100	100

* These are only 1½-lb. cartridges.

TABLE III.

NINE-POUNDER.

Description of carriage.	Where carried			Round shot.	Case Shot.			Total shot.	Cartrid	
					Heavy.	Light.	Spheri. al.		3-lbs.	14 ozs.
New patent limber.	Gun Limber		Off Box	13	3	—	—	16	16	—
			Near Box	13	—	3	—	16	16	—
	Ammun. Carriage	Limber	Off Box	13	3	—	—	16	16	—
			Near Box	13	—	3	—	16	16	—
		Body	Fore Box	12	2	2	12	28	16	12
			Hind Box	24	—	—	—	24	24	—
	Total			88	8	8	12	116	104	12
	Total for five guns			440	40	40	60	580	520	60
Two-wheel Carriage.	Gun limber, two boxes			26	3	3	—	32	32	—
	Amunition Carriage			52	5	5	10	72	62	10
	Total			78	8	8	10	104	94	10
	Total for five guns			390	40	40	50	520	470	50

TABLE IV.

MEDIUM TWELVE-POUNDER.

Nature of Limber.	Where carried.			Round shot.	Case shot.			Total shot.	Cartrid	
					Heavy.	Light.	Spherical		4-lb.	1-lb.
New patent.	Gun Limber		Off Box	5	1	—	—	6	6	—
			Near Box	5	—	1	—	6	6	—
	Ammun. Carriage.	Limber	Off Box	12	—	4	—	16	16	—
			Near Box	12	4	—	—	16	16	—
		Body	Fore Box	12	—	—	8	20	12	8
			Hind Box	16	2	2	—	20	20	—
	Total			62	7	7	8	84	76	8
	Total for five guns			310	35	35	40	420	380	40
One box on ammunition carriage.	Gun Limber		Off Box	5	1	—	—	6	6	—
			Near Box	5	—	1	—	6	6	—
	Ammun. Carriage.	Limber Box		22	2	2	6	32	26	6
		Body	Fore Box	13	2	2	—	17	17	—
			Hind Box	13	2	2	—	17	17	—
	Total			58	7	7	6	78	72	6
	Total for five guns			290	35	35	30	390	360	30

ARTIMOMANTICO, a metallic compound invented by a gentleman at Leghorn. It is of the same weight as gold of eighteen carats, and can be made like that of twenty-four. Buttons are manufactured from it at Bologna, and sold for 50 cents the dozen. Artimomantico is soft and bends, and derives its superiority over other gold-coloured metals, from its not tarnishing.

ARTISCUS; from *αρτος*, bread; in medicine, denotes a troche, more particularly that prepared with vipers' flesh mixed up with bread, to be used in the composition of Venice treacle.

ARTIST. See ART.

An ARTIST has more correctly been defined one who practises any of the liberal arts as a profession, in distinction from the artisan who mixes them with trade and commerce. The builder, it is said, should not be called an architect, nor should the sign-painter, the figure-caster, or plasterer, the chair-sulptor, commonly called cabinet-maker, the paper-hanger, or wall-decorator, be called artists, because their employments do not consist in the exercise o the higher faculties of the mind, but in practising lower departments of art, or in executing the thoughts and designs of others.

ARTIZOOS; from *αρτι* short, and *ζωη*, life; is used by some ancient physicians for an infant short-lived by reason of a difficult birth.

ARTOBRIGA, an ancient town of Vindelicia, now called Altzburg, in Bavaria, on the Danube, below Ingolstadt, according to Aventinus; but Cluverius supposes it to be Labenau on the Saltzbach, below Lauffen, in the archbishopric of Saltsburg.

ARTOCARPUS; from *αρτος*, bread, and *καρπος*, fruit; the bread-fruit tree; a genus of the monandria order and monœcia class; natural order, urticæ. It has a cylindric amentum, thickens gradually, and is covered with flowers: the male and female in a different amentum. In the male, CAL. none; COR. bivalved. In the female no calyx nor corolla; stylus, one, and the drupa is many celled. The species are, artocarpus incisa, sitodium incisum, radermachia incisa, soccus lanosus, seu granosus, in French le rima, ou fruit à pain, bread-fruit tree, native of the Molucca Islands. Artocarpus integrifolia, sitodium macrocarpon, seu cauliflorum, radermachia integra, soccus arboreus, seu tojacca-marum Indica, Indian jaca tree, a shrub, native of the East Indies. Artocarpus Philippensis, a shrub, native of the Phillippine Islands. Artocarpus pubescens, ansjeli, seu castania malabarica, a shrub, native of Malabar. Though this tree has been mentioned by many voyagers, particularly by Dampier, Rumphius, and Lord Anson, yet very little notice seems to have been taken of it till the return of Captain Wallis from the South Seas. Dampier states that in Guam, one of the Ladrone islands, 'there is a certain fruit called the bread-fruit, growing on a tree as big as our large apple-trees, with dark leaves. It is round, and grows on the boughs like apples, of the bigness of a good penny loaf: when ripe it turns yellow, soft, and sweet, but the natives take it green, and bake it in an oven till the rind is black; this they scrape off and eat the inside, which is soft and white, like the inside of new-baked bread, having neither seed nor stone; but if kept above twenty-four hours it is harsh. As this fruit is in season eight months in the year, the natives feed upon no other sort of bread during that time.' Rumphius says, 'the fruit is shaped like a heart, and increases to the size of a child's head. Its surface or rind is thick, green, and covered everywhere with warts of a quadragonal or hexagonal figure, like cut diamonds, but without points. The more flat and smooth these warts are the fewer seeds are contained in the fruit, and the greater is the quantity of pith, and that of a more glutinous nature. The internal part of the rind, or peel, consists of a fleshy substance, full of twisted fibres, which have the appearance of fine wool; these adhere to and in some measure form it. The fleshy part becomes softer towards the middle, where there is a small cavity formed without any nuts or seeds, except in one species which has but a small number, and this sort is not good unless it is baked or prepared some other way; but if the outward rind be taken off, and the fibrous flesh dried and afterwards boiled with meat as we do cabbage, it has then the taste of artichoke bottoms. The inhabitants of Amboyna dress it in the liquor of cocoa-nuts, but they prefer it roasted on coals till the outward part or peel is burnt. They afterwards cut it into pieces and eat it with the milk of the cocoa-nut. Some people make fritters of it, or fry it in oil; and others, as the Sumatrans, dry the internal soft part, and keep it to use, instead of bread, with other food. It affords a great deal of nourishment, and is very satisfying, therefore proper for hard-working people; and being of a gentle astringent quality is good for persons of a laxative habit of body. It is more nourishing boiled in our manner with fat meat, than roasted on coals. The milky juice which distils from the trunk, boiled with the cocoa-nut oil, makes a very strong bird-lime. This tree is to be found on the eastern parts of Sumatra, and in the Malay language is called soccus and soccum capas. It grows likewise about the town of Bantam in Java, and in Balega and Madura.'

In 1791 a vessel was fitted out for the purpose of conveying a quantity of these inestimable trees to various parts of his majesty's colonies, under the command of Captain Bligh, who set sail on the 2d of August, and arrived at Otaheite April 8, 1792. The number of plants taken on board at Otaheite was 2634, in 1281 pots, tubs, and cases; and of these 1151 were bread-fruit trees. When they arrived at Coupang 200 plants were dead; but the rest were in good order. They arrived at St. Helena with 830 fine bread-fruit trees, besides other plants. Here they left some of them, and from hence the East Indies may be supplied with them. On their arrival at St. Vincent's they had 678 bread-fruit trees. Nearly half this cargo was deposited here for the use of the Windward Islands; and the remainder, intended for the Leeward Islands, was conveyed to Jamaica, and distributed as the governor and council of Jamaica pleased to direct. The exact number of bread-fruit trees brought to Jamaica was 352, out of which five only were reserved for the botanic garden at Kew. There is a distinction between that which bears fruit with stones or seeds, and that in which the fruit has none. The parts of fructification of that tree which bears the fruit without stones are defective. The amentum, or catkin, which contains the male parts, never expands. The styli, or female parts of the fruit, are likewise deficient: from which it follows that there can be no stones or seeds, and therefore this tree can only be propagated by suckers or layers; although it is abundantly evident that it must originally have proceeded from the seed-bearing bread-fruit tree. Instances of this kind we sometimes find in European fruit, such as the barberry and the Corinthian grape from Zant, commonly called currants, which can therefore be increased only by layers and cuttings. Dr. Solander was assured by the oldest inhabitants of Otaheite, and the adjoining islands, that they well remembered there was formerly plenty of the seed-bearing bread-fruit; but they had been neglected on account of the preference given to the bread-fruit without seed, which they propagate by suckers.

ARTOIS, a ci-devant province of France, extremely fertile, and formerly one of the seventeen provinces of the Netherlands. The name was derived from the Atrebates, the ancient inhabitants. Its greatest length from north to south was about twenty-four leagues, and its breadth about twelve, being bounded on the south and west by Picardy; on the east by Hainault; and on the north by Flanders. It is now included in the department of the Straits of Calais. Artois was always accounted a very productive province. It is rich in corn and hops, but is deficient in wood, and yields little wine or fruit. The chief articles of export are grain, flax, hops, wool, oil, cabbage, and rape-seed.

ARTOMELI; from αρτος, bread, and μελι, honey; in ancient pharmacy, a kind of cataplasm, prepared of bread and honey.

ARTOTYRITES; from αρτος and τυρος, cheese; a branch of the ancient Montanists, who first appeared in the second century in Galatia. They used bread and cheese in the Eucharist, or perhaps bread baked with cheese. Their reason was, that the first men offered to God not only the fruits of the earth, but of their flocks too. The artotyrites admitted women to the priesthood, and even to be bishops; and Epiphanius informs us, that it was a common thing to see seven girls at once enter into their church robed in white, and holding torches in their hands; where they wept and bewailed the wretchedness of human nature, and the miseries of this life.

ARTZEN, a market-town and bailiwic of Calenberg, in the principality of Hanover, between the Homme and Weser. To the bailiwic belong twenty-two villages and the castle of Furstenberg, formerly the property of the count of Oberstein. This town is the seat of an ecclesiastical superintendant.

ARVAD, or Aradus, an ancient city of Phœnicia, built on a small island, south of Tyre, about three miles from the continent. It was formerly famous for commerce and riches, and shared the fate of Tyre. It is now called Ruwadde, and belongs to the Turks. It is quite ruinous, having only an old fort and a few cannon to defend it; but the height of the island gives it a fine appearance from a distance.

ARVAL, a town of Hindostan, in the district and province of Bahar, forty miles south-west of Patna.

ARVALES Fratres, in Roman antiquity, a college of twelve priests, instituted by Romulus, and chosen out of the most noble families, himself being one of the body: they assisted in the sacrifices of the ambervalia, annually offered to Ceres and Bacchus for the prosperity of the fruits of the earth, when they wore on their heads crowns made of ears of corn. The origin of this institution was as follows: Acca Laurentia, Romulus' nurse, was accustomed once a year to make a solemn sacrifice for a blessing on the fields, her twelve sons always assisting her in the solemnity; but at last losing one of them, Romulus offered himself to supply his place, and gave this small society the name of Arvales fratres. This order was in great repute at Rome; they held the dignity for life, and never lost it on account of imprisonment or banishment.

ARUANUS, in conchology, a species of murex, found on the coast of New Guinea. The tail is patulous; the spire crowned with spines. This is the buccinum aruanum of Rumphius.

ARVENSIS, in entomology, a species of curculio; gray, with three lines on the thorax; the wing-cases rufous, and tessalated. Also a species of cicada, a native of Denmark: yellow; abdomen and sides black. A species of phalæna; the phalæna noctua of Linnæus. The wings are brown, with a transverse yellow spot in the middle; margin brown. This is the noctua brunnea of Schmetterl. Also a species of Vespa, found in Europe, with four yellow bands on the abdomen.

ARVERNI, a brave and ancient people; one of the most powerful nations of Gaul They claimed affinity with the Romans, as descendants from Antenor; and after their subjugation by the latter, their ancient liberty was preserved to them on account of their bravery.

ARVICOLA, in entomology, a species of scarabæus, found in Russia: the shield of the head reflected; the body black.

ARVIRAGUS, the son of Cunobelin, a British king, in the time of Claudius and Domitian.

ARUM, or Wake-robin, in botany, a genus of plants of the class monœcia; order, polyandria. There are several species, of which the following are the most remarkable. The generic characters are cal. spathe, one-leaved: cor. none: stam. filaments, none; anthers, sessile: pist. germ, obovate; style, none; stigma, bearded: per. berry, globular; seeds, several. A. arborescens, or dumb cane, is a native of the sugar islands and warm parts of America, where it grows chiefly on low grounds. A. arisarium as well as the A. proboscidium and A. tenuifolium have usually been separated from this genus, and distinguished by the general name of arilarum, or friar's cowl: the flower bears in April. A. colocasia, as well as the A. divaricatum, esculentum, peregrinum, and sagittifolium, have all mild roots, which are eaten by the inhabitants of hot countries, where they grow naturally. A. dracunculus, or the common dragon's cane, grows naturally in most of the southern parts of Europe. A. Italicum, a native of Italy, Spain, and Portugal: they appear in the end of April or beginning of May. A. maculatum, or common wake-robin, grows naturally in woods and on shady banks in most parts of Britain: the flowers appear in April, and their structure has given rise to many disputes among the botanists. The receptacle is long, in the shape of a club, with the seed-buds surrounding its base. The chives are fixed to the receptacle amongst the seed-buds fixed to the fruit-stalk, and placed between two rows of tendrils, the use of which is not known. A. trilobatum, or arum of Ceylon, is a native of that island and some other parts of India. All the species of this plant are hardy, except the trilobatum and the arborescens. The former must be kept constantly in a stove, and the latter in a moderate hot-bed. The arborescens is propagated by cutting off the stalks into lengths of three or four joints, which must be left to dry six weeks or two months; for if the wounded part is not perfectly healed over before the cuttings are planted, they will rot and decay. They are then to be planted in small pots filled with light sandy earth, and plunged in a moderate hot-bed of tan, observing to let them have little water till they have taken good root. The roots of the maculatum and dracunculus are used in medicine, and differ in nothing but that the latter is somewhat stronger than the former. All the parts of the arum, particularly the root, have an extremely pungent acrimonious taste; but if dried and kept some time, it loses much of its acrimony, and becomes at length an almost insipid, farinaceous substance. This root is a powerful stimulant and attenuant. It is reckoned a medicine of great efficacy in some cachectic and chlorotic cases, in weakness of the stomach occasioned by a load of viscid phlegm. Great benefit has been obtained from it in rheumatic pains, in which it may be given from ten grains to a scruple of the fresh root twice or thrice a-day, made into a bolus or emulsion with unctuous and mucilaginous substances, which cover its pungency, and prevent its making any painful impression on the tongue. It generally excites a slight tingling sensation through the whole habit, and when the patient is kept warm in bed, produces a copious sweat. The arum was formerly an ingredient in an officinal preparation, the compound powder; but in that form its virtues are very precarious. Some recommend a tincture of it drawn with wine; but neither wine, water nor spirits, extract its virtues.

ARUNCI, in entomology, a species of Cicada of a ferruginous color and brown eyes.

ARUNCO, in zoology, a species of rana, or toad, larger than the common frog, but of the same color. It is found in Chili. All the feet are palmated.

ARUNCUS, GREATER MEADOW-SWEET, in botany, a genus of plants, called by Tournefort and others barra capræ, and by Linnæus spiræa. This plant has been supposed to be of the same genus with the filipendula, but, by the examination of the flowers, they appear to be extremely different.

ARUNDA, a town of Hispania Bætica, on the Anas, or Guadiana, now said to be Ronda in Granada, on the confines of Andalusia. Long. 5° 40′ W., lat. 36° 26′ N.

ARUNDEL, an ancient borough and market town of Sussex, seated on the north-west side of the Arun, over which there is a bridge. It had a harbour in which a ship of 100 tons burden might ride; but the sea had ruined it so far, that in 1733 an act passed for repairing it, and for erecting new piers, locks, &c. The river is now navigable for vessels of 200 tons and upwards, and the navigation is carried on to the Thames by means of a canal. It abounds in mullet of a very fine quality. A considerable trade in bark is carried on here. Arundel sent *two* members to parliament from the reign of Edward I., since the passing of the reform bill it sends *one*. It is mentioned in the will of Alfred, who left the castle to his brother's son. It was formerly a place of great strength, and was besieged by Henry I., by whom it was taken after a gallant resistance from Bellesone de Montgomery earl of Arundel. The castle, which belonged to the family of Howard, was until lately in a mouldering condition; but completely repaired by the late Duke of Norfolk, at a great expense. A weekly market is held here on Thursday. Population 2700. Arundel is the premier earldom in England, belonging to the illustrious family of Norfolk; and is the only title in England that goes along with the lands. It is fifty-seven miles south-west by south of London, and ten east of Chichester.

ARUNDEL OIL, in the materia medica. At Bombay, Gambroon, and Surat in the East Indies, there grows a tree which bears a nut en closed in a rough husk, resembling the horse chestnut; and the kernel of the nut yields an oil by expression, which is of a purgative nature A tea-spoonful of it is reckoned a dose. The tree is called, the Arundel tree at Bombay and its oil the Arundel oil. Dr. Monro thinks it probable that this is the oil of the purging nuts mentioned in Dale's pharmacologia, and the palma Christi Indica of Tournefort.

ARUNDEL (Thomas), archbishop of Canter bury in the reigns of Richard II. Henry IV. and Henry V., the second son of Robert, and brother of Richard earl of Arundel, who was beheaded. In 1375, at twenty-two years of age, from being archdeacon of Taunton he was raised to the bishopric of Ely. He was a great benefactor to the church and palace of this see. In 1386 he was appointed lord chancellor of England, and in 1388 translated to the archiepiscopal see of York; and in 1396 to that of Canterbury, when he resigned the chancellorship. This was the first instance of the translation of an archbishop of York to the see of Canterbury. Scarcely was he fixed in this see, when he had a contest with the university of Oxford about the right of visitation. The affair was referred to king Richard, who determined it in favor of the archbishop. At his visitation in London he revived an old constitution, by which the inhabitants of the respective parishes were obliged to pay to their rector one half-penny in the pound out of the rent of their houses. In 1398 the house of commons impeached him, together with his brother the Earl of Arundel, and the Duke of Gloucester, of high treason. The archbishop was sentenced to be banished, and within forty days to depart the kingdom on pain of death. He retired first to France; and then to the court of Rome, where Pope Boniface IX. gave him a kind reception. About this time the duke of Lancaster, afterwards Henry IV. was in France, having also been banished by king Richard. The nobility and others, tired with the oppressions of Richard, solicited the duke to take the crown; sending over their request in a letter to archbishop Arundel, desiring him to be their advocate on this occasion with the duke. The archbishop accordingly accompanied the messengers to the duke at Paris, and of course the inviting offer, after some objections easily obviated, the duke accepted. Arundel returned with him to England, and was restored to his see. In the first year of this prince's reign, the archbishop summoned a synod which sat at St. Paul's. The next year we find him again in dispute with the commons, who moved that the revenues of the church might be applied to the service of the public: but Arundel opposed the motion with such vigor that it was negatived. In 1408 Arundel began to exert himself against the Lollards, or Wicliffites, particularly against the celebrated Sir John Oldcastle, Lord Cobham. He also procured a synodical constitution, which forbade the translation of the Scriptures into the vulgar tongue. He died at Canterbury in 1413, of an inflammation in his throat, with which he was first seized, it is said, whilst pronouncing sentence upon Lord Cobham. The Lollards asserted this to be a judgment from God; and Bishop Goodwin speaks in the same manner. 'He who had withheld,' says he, 'from the people the word of God, the food of the soul, by the just judgment of God had his throat so closed, that he could not speak a single word, nor swallow meat or drink, and was so starved to death.' He was buried in the cathedral church of Canterbury, under a monument erected by himself. To this church he was a considerable benefactor: he built the lantern, tower, and a great part of the nave; gave a ring of five bells, called from him Arundel's ring, several rich vestments, a mitre enchased with jewels, a silver gilt crosier, and two gold chalices.

Arundel (Lady Blanch), daughter of the earl of Worcester, and wife of Lord Arundel, celebrated for her brave defence of Wardour castle against the parliamentary army, which consisted of 1300 men; and although the little garrison mustered only forty-five, yet she maintained the place for six days, and then capitulated. She died in 1649, aged sixty-six.

The ARUNDELIAN Marbles, are ancient stones or marbles, first named after Thomas earl of Arundel, who procured them from the east, or from Henry his grandson, who presented them to the university of Oxford. They arrived in England in 1627, and then consisted of thirty-seven statues, 128 busts, and 250 inscriptions, together with a large number of altars, sarcophagi, fragments of sculpture, and an invaluable assemblage of gems; the inscriptions being principally sepulchral, and of a private nature. But one, called the Parian chronicle, from its being written at Paros, is said to have contained a chronological detail of the principal events of Greece, during a period of 1318 years, beginning with Cecrops, before Christ 1582 years, and
with the archonship of Diognetus, before
264. It is this portion of these marbles
more particularly attracted the attention
learned. The chronicle of the last ninet
is lost; so that the part now remaining
the archonship of Diotimus, 354 years
the birth of Christ; and in this fragment
scription is at present much corroded and

The whole of these relics of antiquity,
pretended, were purchased in Asia Mino
the islands of the Archipelago, by Mr.
Petty, who in the year 1624 was sent by
of Arundel for the purpose of making s
lections for him in the east; and when
to England were placed in gardens be
to Arundel house. Soon after their arri
excited general curiosity, and were inspe
Sir Robert Cotton, and other eminent m
prevailed upon the learned Selden to
himself in explaining the inscriptions.
lowing year Selden accordingly publi
small volume in quarto, including about
nine of them. But in the turbulent
Charles I. and the subsequent usu
Arundel-house was often deserted by th
trious owners; and in their absence,
these marbles were defaced and mutilate
others either stolen or used for the ordin
poses of architecture. The Parian chro
particular, was unfortunately broken. Th
part containing thirty-one epochas, is said
been worked up in repairing a chimney i
del-house. Selden's work becoming very
bishop Fell engaged Mr. Prideaux to p
new edition of the inscriptions, which was
at Oxford in 1676. In 1732, Mr. M
obliged the public with a more compre
view of the marbles than either of his p
sors. Lastly, Dr. Chandler published a
splendid description of them in 1763, i
he corrected many mistakes of the former
and in some of the inscriptions, particul
of the Parian chronicle, supplied the luc
many ingenious conjectures. We cann
enter into the dispute respecting the auth
of these curious stones. Sir Isaac New
other able chronologists and historians ha
little regard to their claims; and in 1788
Robertson, in an essay, entitled the
Chronicle, boldly, and with much plau
asserts them to be a fabrication of compa
modern date. This treatise was reviewe
late professor Porson, in the Monthly
June 1789; that distinguished Greek
fully and very ably vindicating the auth
of the Parian marbles. See also his Tracts
by Mr. Kidd. p. 57. The reader will
sufficiently acquainted with both sides
subject

ARUNDINACEA, in conchology, a
of sabella found in some rivers of Europ
subconic, and composed of fragments of
of reeds placed on each other.

ARUNDINACEUS, in ornithology, a
of turdus or thrush, that inhabits th
marshes of Europe, and is the la rouss
Buffon and Brisson; the junco of Ray a
loughby; and the reed thrush of Dr. La

is rather larger than the common lark; of a ferruginous brown color; quill-feathers brown, reddish at the end. It is found in Russia and Poland.

ARUNDINETI, in entomology, a species of tipula; color whitish, with villose antennæ, and black eyes. It is found in Europe, in reedy marshes.

ARUNDINIS, a species of phalæna, living on reeds; wings cinereous with black dots, marked beneath with a central brown spot. Also a species of aphis that lives on the leaves of the wood-reed. The body is green; thorax and head brown.

ARUNDO, in botany, the reed: a genus of the digynia order, triandria class of plants; ranking in the natural method under the fourth order, gramina. The calyx consists of two valves, and the floscules are thick and downy. The following are the principal species, viz. 1. A. arborea, has a tree-like stalk, with narrow leaves, and in all other respects resembles the bambos. 2. A. bambos, or the bamboo, is a native of the East Indies and some parts of America; where it frequently attains the height of sixty feet. See Bamboo. 3. A. debax, or manured reed, a native of warm countries, but will bear the cold of our moderate winters in the open air. It dies to the surface in autumn, but appears again in the spring ten or twelve feet high in one summer. The stalks of this species are brought from Spain and Portugal; and used by weavers, as also for making fishing-rods. 4. A. orientalis is what the Turks use for writing pens: it grows in a valley near mount Athos, as also on the banks of the river Jordan. None of these plants are found in Britain. 5. A. phragmitis, or the common marsh-reed, grows by the sides of our rivers, and in standing waters. 6. A. versicolor, the Indian variegated reed, supposed to be a variety of the donax, differing from it only in having variegated leaves.

ARUNS Tarquinius, the son of Tarquin II. the last king of Rome, who meeting Brutus in the first battle, after the banishment of the royal family, they mutually killed each other.

ARURA, in the middle-age writers, a field ploughed and sowed. Some writers also use the word to signify the work of a day at plough.

ARUSINI Campi, or Arusian Fields, plains in Lucania, famous for the last battle between the Romans and Pyrrhus. That prince being at Tarentum, and hearing that the two new consuls Curius Dentatus and Cornelius Lentulus had divided their forces, the one including Lucania and the other Samnium; he divided a chosen detachment of his army into two bodies, marching with his Epirots against Dentatus, in hopes of surprising him in his camp near Beneventum. But the consul having notice of his approach, marched out of his entrenchments with a strong detachment of legionaries to meet him, repulsed his van guard, put many of the Epirots to the sword, and took some of their elephants. Curius, encouraged by this success, marched into the Arusian fields, and drew up his army in a plain, which was wide enough for his troops, but too narrow for the Epirot phalanx to act. But the king's eagerness to try his strength and skill with so renowned a commander, stimulated him to engage at that great disadvantage. Upon the first signal the action began; and one of the king's wings giving way, victory seemed inclined to the Romans. But that wing where the king fought in person repulsed the enemy, and drove them to their entrenchments. This advantage was in great part owing to the elephants; a circumstance which Curius perceiving, commanded a body of reserve, which he had posted near the camp, to advance and attack those animals with burning torches; which frightened and annoyed them to such a degree, that they wheeled about, broke into the phalanx, and put that body into the utmost disorder. The Romans taking advantage of this confusion, charged with such fury that the enemy were entirely broken and defeated. Pyrrhus retired to Tarentum, attended only by a small body of horse, leaving the Romans in full possession of his camp; which they so much admired, that they ever after imitated it as a model.

ARUS'PEX, }
Arus'pice, } Lat. *aruspex*, or *haruspex*, from *ara*, an altar, and *spicere*, to see, to regard.
Arus'picy. }

Adorn'd with bridal pomp, she sits in state;
The public notaries and *aruspex* wait.

Dryden's Juvenal's Satires, 10.

They [the Romans] had colleges for augurs and *aruspices*, who used to make their predictions, sometimes by fire, sometimes by flying of fowls, &c.

Howell's Letters, iii. p. 23.

A flam more senseless than the roguery
Of old *aruspicy* and augury.

Butler's Hudibras, ii. 3.

ARUSPICES, or Haruspices, in Roman antiquity, an order of priests who pretended to foretel future events by inspecting the entrails of victims killed in sacrifice; they were also consulted on occasion of portents and prodigies. The aruspices were always chosen from the best families; and as their employment was of the same nature as that of the augurs, they were as much honored. Their college, as well as those of the other religious orders, had its particular registers and records. Cato, who was an augur, used to say, he wondered how one aruspex could look at another without laughing in his face. The aruspici libri, were a kind of sacred writings wherein the laws and discipline of the aruspices were described.

ARVUM, in ancient agriculture, properly denoted ground ploughed but not sowed. The word is sometimes extended to all arable, or corn land, in contradistinction from pasture.

ARX, in the ancient military art, a town, fort, or castle, for defence of a place. The arx, in ancient Rome, was a distinct edifice from the capitol, though some have confounded the two. The arx, properly speaking, being a place on the highest part of the Capitoline Mount, fortified with towers and pinnated walls, in which was also the temple of Jupiter Capitolinus. This was also the name of a consecrated place on the Palatine Mount, where the augurs publicly performed their office. Off this arx the feciales, or heralds, gathered the grass used in the ceremony of leagues and treaties.

ARYTÆNOIDES, in anatomy, two cartilages which, with others, constitute the head of the larynx. It is also applied to some muscles of the larynx.

ARYTÆNOIDEUS, in anatomy, one of the muscles serving to close the larynx.

ARYTHMUS, in medicine, the want of a just modulation in the pulse. It is opposed to eurythmus, a pulse modulated agreeably to nature.

ARZBERG, a market town in the circle of the Maine, district of Wunsiedel, Bavaria. The neighbouring hills yield iron, lime, and alum. The lime burned here is transported as manure to the Upper Palatinate and Bohemia. Seven miles east of Wunsiedel.

ARZILLA, an ancient maritime town of Africa, in the kingdom of Fez, S. S. W. of Tangiers. It was formerly a Roman colony; afterwards fell under the government of the Goths, and was next taken by the Mahommedans. Alphonso of Portugal, surnamed the African, took it by assault in 1472, and brought away the presumptive heir of the crown. After that prince came to the throne, he besieged it, in 1508, with 100,000 men. The Portuguese at length forsook it of their own accord. Long. 5° 40′ W., lat. 35° 40′ N.

AS. Usually called a conjunction, but according to some the Saxon article, *the*, *this* or *that*, which they say may always be substituted for it.

Besides that law which concerneth men *as* men; and that which belongs unto men *as* they are men, linked with others in some society: there is a third, which touches all several bodies politick, so far forth, *as* one of them hath publick concerns with another.
Hooker's Eccles. Polity.

PRINCE HEN. Dar'st thou be *as* good *as* thy word now?

FALST. Why, Hal, thou knowest, *as* thou art but a man, I dare; but *as* thou art a prince, I fear thee, *as* I fear the roaring of the lion's whelp.
Shakspeare. Henry IV.

When thou dost hear I am *as* I have been;
Approach me, and thou shalt be *as* thou wast. *Id.*

The cunningest mariners were so conquered by the storm, *as* they thought it best, with stricken sails, to yield to be governed by it. *Sidney.*

He had such a dexterous proclivity, *as* his teachers were fain to restrain his forwardness. *Wotton.*

The relations are so uncertain, *as* they require a great deal of examination. *Bacon.*

God shall by grace prevent sin so soon, *as* to keep the soul in the virginity of its first innocence. *South.*

Madam, were I *as* you, I'd take her counsel;
I'd speak my own distress.
A. Philip's Distrest Mother.

The objections that are raised against it *as* a tragedy, are as follow.
Gay's Preface to What d'ye Call it.

A simple idea is one uniform idea; *as* sweet, bitter.
Watts.

AS, among the ancient Romans, a weight, consisting of twelve ounces; being the same with libra, or the Roman pound. The word is derived from the Greek αις, which in the Doric dialect is used for εις, one, q. d. an entire thing; though others will have it named as, quasi æs, because made of brass.

AS, was also the name of a Roman coin, of different weight and different matter in different ages of the commonwealth. Under Numa Pompilius, according to Eusebius, the Roman money was either of wood, leather, or shells. In the time of Tullus Hostilius, it was of brass; and called as, libra, libella, or pondo, because actually weighing a pound or twelve ounces. About 420 years after, the first Punic war having exhausted the treasury, they reduced the as to two ounces. In the second Punic war, Hannibal pressing very hard upon them, they reduced the as to half its weight, viz. to one ounce. And lastly, by the Papirian law, they took away half an ounce more, and consequently reduced the as to the diminutive weight of half an ounce; and it is generally thought that it continued the same during the commonwealth, and even till the reign of Vespasian. The as, therefore, was of four different weights in the commonwealth. Its original stamp was that of a sheep, ox, or sow; but from the time of the emperors, it had on one side a Janus with two faces, and on the reverse the rostrum or prow of a ship.

AS, being used to denote any integer or whole, signified in old English law the whole inheritance; whence hæres ex asse, the heir to the whole estate.

ASA; אסא, Heb. i. e. a healer of sickness; king of Judah, succeeded his father Abijam, A. M. 2988. He abolished idolatry, restored the worship of the true God, and, with the assistance of Benhadad king of Syria, took several towns from the king of Israel. He died A. A. C. 917, and was succeeded by Jehoshaphat.

ASA, among naturalists, a word taken by modern authors from the lasar of the ancients, is applied to a gum very different from that anciently known by the name. The asa of the ancients was an odoriferous and fragrant gum; that of after ages had so little title to this epithet, that they distinguished it by an additional one, expressing its being of an offensive smell, as ASAFŒTIDA, which see. The Arabian writers describe two kinds of asa, the one of an offensive, the other of an aromatic smell.

ASA, or ASSA, in the materia medica, a name given to two very different substances, called asa dulcis and asa fœtida.

ASAFŒTIDA, in chemistry, the common name of the FERULA asafœtida of Linnæus, which see.

ASAHEL; אשהאל, Heb. i. e. God has wrought; one of the sons of Zeruiah, David's sister, and the younger brother of Joab. He was one of David's thirty heroes, and remarkable for his swiftness. At the battle of Gibeon he pursued Abner with so much obstinacy, that he was obliged to kill him in self-defence, though it would appear with reluctance; 2 Sam. ii. 19—23.

ASAPH; אספ, Heb. i. e. gathering; the son of Berachiah, a Gershomite, and a famous musician and psalmist under David, king of Israel. Twelve of the Psalms bear his name; but it is doubted whether he was the author of them all, as some relate to later times.

ASAPH, ST. a city of Flintshire, in North Wales, situated in a pleasant valley at the confluence of the Elwy and Clwyd, twenty miles west of Chester, and 205 north-west of London.

As a bishopric, St. Asaph is of great antiquity, being founded about A. D. 560, by Kentigern, bishop of Glasgow. He began the church on the banks of the river Elwy, whence it is called by the Welsh, Llan Elwy, and in Latin, Elwensis. Kentigern returning into Scotland left St. Asaph his successor. The country was frequently in after times the seat of war between the English and the Welsh; and the records of the see are therefore very defective. This diocese does not contain any one whole county, but consists of part of Denbigh, Flint, Montgomery, and Merioneth shires, and a small part of Shropshire; wherein are 121 parishes, and 131 churches and chapels, most of which are in the immediate patronage of the bishop. It has but one archdeaconry, viz. that of St. Asaph, which is united to the bishopric, for the better maintenance thereof. The town, although situated in a rich valley, is a poor ill-built place; and the cathedral a plain building, 170 feet long, 108 broad, and 90 high. St. Asaph is contributory with Flint in sending one member to parliament. Market on Saturday. The deanery of St. Asaph is valued at £45. 11*s*. 5*d*., and is united to the vicarage of Henllan in the deanery of Rhos.

Asaph, St. a native of North Wales, was descended of an ancient family, and flourished under Carentius king of the Britons, about A. D. 590. Being a monk in the convent of Llan Elwy, and the successor of its founder Kentigern, that establishment received his name ever after. He wrote the Ordinances of his church, and the Life of St. Kentigern. Bayle says he was the first who received unction from the pope.

ASAPHEIS, *ασαφεις*; from *α* negative, and *σαφης*, clear; persons who do not utter their words in a clear manner. The defect is occasioned, says Galen, 'either by some hurt which the organs of speech have contracted from a disorder of the nerves, or else by delirium.'

ASAPPES, or Azapes, an order of soldiers in the Turkish army, whom they expose to the first shock of the enemy. The word is derived from the Turkish saph, which signifies rank, from whence they have formed asphaph, to range in battle. They travel on foot, and have no pay but the plunder they can get from the enemy.

ASAR, a gold coin current at Ormus in the Persian Gulf, worth 6*s*. 8*d*.

ASAROTA, *ασαρωτα*; from *α* and *σαιρω*, I sweep; a kind of painted pavement in use before the invention of Mosaic work. The most celebrated was that at Pergamos, painted by Sosus, and exhibiting the appearance of crumbs, as if the floor had not been swept after dinner; whence, according to Pliny, the denomination. Perrault supposes it to have been a black kind of pavement of a spongy matter.

ASARUM, Asarabacca, in botany, a genus of the monogynia order, and dodecandria class of plants. The calyx is trifid or quadrifid, and rests on the germen; there is no corolla; the capsule is leathery and crowned. There are three species, viz. 1. A. Canadense, a native of Canada. 2. A. Europæum, growing naturally in some parts of England; and 3. A. Virginicum, a native of America. The dried roots of this plant have been generally brought from the Levant; those of our own growth being supposed weaker. Both the roots and leaves have a nauseous, bitter, acrimonious, hot taste; their smell is strong, and not very disagreeable. The principal use of this plant among us is as a sternutatory; and the root of asarum is perhaps the strongest of all the vegetable errhines, white hellebore itself not excepted. The leaves are the principal ingredient in the pulvis sternutatorius, or pulvis asari compositus, of the shops.

ASASI, in botany, a name given by the people of Guinea to a tree, the leaves of which being boiled in water, and held to the mouth, cure the tooth-ache. In its form and manner of growing it resembles the laurel; the leaves are very hard and stiff, and grow alternately on the stalks; they have short pedicles, and the branches are blackish and rugged, but variegated with small reddish spangles, or scaly protuberances.

ASBAMEA, in ancient geography, a fountain of Cappadocia, near Tyana, sacred to Jupiter and to an oath. Though this fountain bubbled up as in a state of boiling, yet its water was cold; and never ran over, but fell back again.

ASBECK, a town of the bishopric of Munster, Westphalia, annexed to the possessions of the house of Salm in 1803. Here is a convent for noblemen's daughters. It is four miles south-east of Ahaus.

ASBEN, a considerable kingdom in the interior of Africa, between Fezzan and Cashna. The sultan is said by Hornemann to rank next to that of Bornou among the sovereigns of interior Africa. Zanfara and Guber are tributaries to him; he resides at Agades, and himself, with the greater part of his subjects, are Tuaricks of the tribe Kolluvi.

ASBESTOS, or Asbestus, in chemistry, from *α* privative, and *σβεννυμι*, I extinguish; a mineral consisting principally of silex and magnesia, with a small proportion of alumina, lime, and iron. It is a greenish brittle substance, unctuous to the touch, and somewhat elastic. Its fibres exposed to the violent heat of the blowpipe, exhibit slight indications of fusion; though the parts, instead of running together, moulder away, and part fall down, while the rest seem to disappear before the current of the air. Ignition impairs the flexibility of asbestos in a slight degree. According to Herodotus, the Egyptians made a cloth of this substance, which they used for the purpose of wrapping up the bodies of the dead. Pliny says, he had seen napkins made of it, which, being taken foul from the table after a feast, were thrown into the fire, and by that means were better scoured than if they had been washed in water, &c. But he mentions its principal use being for the making of shrouds for royal funerals, so that the ashes might be preserved distinct from those of the wood, &c. whereof the funeral pile was composed. He calls the asbestos, inventu rarum, textu difficillimum. Bapt. Porta assures us, that in his time the spinning of asbestos was a thing known to every body at Venice; and Sig. Castagnatta, a superintendant of mines in Italy, is said so have carried the manufacture to such perfection, that his asbestos was soft and tractable, much resembling lamb-skin dressed white: he could thicken and thin it at pleasure, and thus either make it into a very white skin or into paper. His method of preparing it is thus described: the stone is laid to soak in warm water; then opened and divided by the hands, that the earthy matter may be washed out. The ablution being several times repeated, the flax-like filaments are collected and dried; being most conveniently spun with an addition of flax. Two or three filaments of the asbestos are easily twisted along with the flaxen thread, if the operator's fingers are kept oiled. The cloth also, when woven, is best preserved by oil from breaking or wasting. On exposure to the fire the flax and the oil burn out, and the cloth remains pure and white. The shorter filaments which separate in washing the stone, may be made into paper in the common manner. Five varieties are described: 1. Common asbestos, which occurs in masses of fibres of a dull greenish color, and of a pearly lustre. It is scarcely flexible, and greatly denser than amianthus. Specific gravity, 2·7. Fuses with difficulty into a grayish-black scoria. It is composed of 63·9 silica, 16 magnesia, 12·8 lime, 6 oxide of iron, and 1·1 alumina, and is more abundant than amianthus, being usually found in serpentine, at Portsoy, the Isle of Anglesea, the Lizard in Cornwall, &c. It was found in the limestone of Glentilt, by Dr. M'Culloch in a pasty state, but it soon hardened by exposure to the air. 2. Amianthus, which occurs in very long, fine, flexible, elastic fibres, is of a white, greenish, or reddish color. It has a silky or pearly lustre, and is slightly translucent; sectile; tough; specific gravity, from 1 to 2·3; it melts with difficulty before the blow-pipe into a white enamel, and consists of 59 silex, 25 magnesia, 9·5 lime, 3 alumina, and 2·25 oxide of iron. It is usually found in serpentine, in Savoy; in long and beautiful fibres, in Corsica; near Bareges in the Pyrenees; in Dauphiny and St. Gothard; at St. Keverne, Cornwall; and at Portsoy, Scotland; in mica slate at Glenelg, Invernessshire, and near Durham. 3. Mountain leather, consisting not of parallel fibres, but interwoven and interlaced so as to become tough. When in very thin pieces it is called mountain paper. Its color is yellowish-white, and its touch meagre. It is found at Wanlockhead, in Lanarkshire. Its specific gravity uncertain. 4. Mountain cork, or elastic asbestos, is, like the preceding, of an interlaced fibrous texture; is opaque, has a meagre feel and appearance, not unlike common cork, and like it too, is somewhat elastic. It swims on water. Its colors are white, gray, and yellowish-brown. Receives an impression from the nail; very tough; cracks when handled, and melts with difficulty before the blow-pipe. Specific gravity, from 0·68 to 0·99. It is composed of silica 62, carbonate of lime 12, carbonate of magnesia 23, alumina 2·8, oxide of iron 3. 5. Mountain wood, or ligniform asbestos, is usually massive, of a brown color, and having the aspect of wood. Internal lustre, glimmering. Soft, sectile, and tough; opaque; feels meagre; fusible into a black slag. Specific gravity 2·0. It is found in the Tyrol; in Dauphiny; and in Scotland: and has lately been employed by Aldini as a protecting dress for firemen.

ASCALON, an ancient city, one of the five satrapies or principalities of the Philistines; situated on the Mediterranean, forty-three miles south-west of Jerusalem, between Azotus on the north, and Gaza on the south. It was the birthplace of Herod the Great, thence surnamed Ascalonites, and was famous for its escallions, which take their name from this town. It is now called Scalona.

ASCANII, in entomology, a species of curculio, of shape cylindrical, color black, and bluish on the sides.

ASCANIUS, the son of Æneas and Creusa, succeeded his father in the kingdom of the Latins, and defeated Mezentius king of the Tuscans, who had refused to conclude a peace with him. He founded Alba Longa; and died about A. A. C. 1139, after reigning thirty-eight years.

Ascanius, in entomology, a species of papilio. Color black, above and beneath, with a white band; posterior wings reddish; it is a native of sil.

ASCARIS, *ασκαρις*; from *ασκεω*, to move about; in zoology, an intestinal worm so called from its troublesome motion. In the Linnæan system it is a genus of the class vermes, order intestina; thus generically characterised. Body round, elastic, and tapering towards each extremity; head with three vesicles; tail obtuse or subulate; intestines spiral, milk-white, and pellucid. Upwards of eighty species have been enumerated, generally deriving their name from the animal they chiefly infest: for the intestinal canal of most animals is affected by some species.

The species of Ascaris described by Gmelin are arranged in the following order:

Infesting man, and the mammalia.—Vermicularis, lumbricoides;—vespertilionis, in the long-eared bat:—Phocæ, bifida, canis, visceralis, lupi, vulpis, leonis, tigridis, felis, cati, martis, bronchialis, renalis, mephitidis, gulonis, talpæ, muris, hirci, vituli, equi, suis, apri.

Infesting birds.—Aquilæ, albicillæ, buteonis, milvi, subbuteonis, hermaphrodita, cornicis, coraciæ, cygni, anatis, fuligulæ, lari, ciconiæ tardæ, papillosa, gallopavonis, galli, gallinæ, phasiani, tetraonis, columbæ, alaudæ, sturni, turdi.

Infesting reptiles.—Testudinis, lacertæ, bufonis, pulmonalis, rubetræ, trachealis, ranæ, intestinalis, dyspnoos, insons.

Infesting fishes.—Anguillæ, marina, blennii, rhombi, percæ, globicola, lacustris, siluri, farionis, truttæ, maraenæ, acus, halecis, argentinæ, gobionis, rajæ, squali, lophii.

Infesting worms.—Lumbrici.

We can only describe the two principally infesting man.

1. A. lumbricoides, is about the same length with the lumbricus terrestris, or common earthworm; but it wants the protuberant ring towards the middle of the body, the only mark by which they can be properly distinguished. The body is cylindrical, and subulated at each extremity; but the tail is somewhat triangular. The lumbricoides is the worm which is most commonly

found in the human intestines. It is viviparous, and produces vast numbers. 2. A. vermicularis, with faint annular rugæ and the mouth transverse, is about a quarter of an inch long, and thicker at one end than the other. It is found in boggy places, in the roots of putrid plants, and very frequently in the rectum of children and horses. It emaciates children greatly, and is sometimes vomited up. See MEDICINE and WORMS.

ASCAROIDES, a species of cucullanus found in the stomach of the silurus glanus: the head is orbicular; tail round, short, and pointed with two spicules.

ASCEN'D,
ASCEN'DANT, *n.* & *adj.*
ASCEN'DANCY,
ASCEN'SION,
ASCEN'SIVE,
ASCEN'T.

Ascendo, from *ad*, and *scendo*, to climb. To mount upwards, to mount, to rise, to acquire an elevation, a superiority.

> Eneas and vnsilly Dido baith tuay,
> To forest grathis in hunting forth he wend
> To marrow als fast as Titan dois *ascend*,
> And ouer the warld gan his bemes spred.
> *Douglas Eneados*, bk. iv. p. 104.

> Northumberland, thou ladder wherewithal
> The mounting Bolingbroke *ascends* the throne.
> *Shakspeare. Richard II.* act v. sc. 2.

> Over head up grew
> Insuperable height of loftiest shade,
> Cedar and pine and fir and branching palm,
> A sylvan scene; and as the ranks *ascend*,
> Shade above shade, a woody theatre
> Of stateliest view.
> *Milton's Paradise Lost*, book iv. line 131.

> Then, rising from his grave,
> Spoil'd principalities and pow'rs; triumph'd
> In open shew; and, with *ascension* bright,
> Captivity led captive through the air. *Id.*

> Thus look'd Elisha, when to mount on high,
> His master took the chariot of the sky;
> The fiery pomp, *ascending*, left the view;
> The prophet gazed, and wished to follow too.
> *Parnell.*

> In his blest life
> I see the path, and in his death the price,
> And in his great *ascent*, the proof supreme
> Of immortality. *Young.*

> Themistocles now entered. At his look,
> Which carried strange *ascendancy*, a spell
> Controlling nature, was the youth abash'd.
> *Glover's Athenaid*, book xiv.

> Thus, having passed the rocks in safety, we found the rest of the coast rise from the sea with a smooth and easy *ascent*; and, floating at ease upon a gentle tide, we soon reached the sands with our feet.
> *Hawkesworth's Telemachus.*

> Their tribes adjusted, clean'd their vig'rous wings,
> And many a circle, many a short essay,
> Wheel'd round and round: in congregation full,
> The figur'd flight *ascends*. *Thomson.*

> Fire fill'd his eyes;
> Turning, he bade the multitude without
> *Ascend* the rampart; they his voice obey'd,
> Part climb'd the wall, part pour'd into the gate.
> *Cowper's Iliad*, book xii.

ASCENDANT, in astrology, denotes the horoscope, or the degree of the ecliptic which rises upon the horizon at the time of the birth of any one. This is supposed to have an influence on the person's life and fortune, by giving him a bent and propensity to one thing more than another. In the jargon of Astrologers, it is also called the first house, the angle of the east, or oriental angle, and the significator of life.—Such a planet ruled in his ascendant; Jupiter was in his ascendant, &c. Hence the word is also used in a moral sense, for a certain superiority which one man has over another from some unknown cause.

ASCENDANTS, in law, are opposed to descendants in succession; i. e. when a father succeeds his son, or an uncle his nephew, &c. heritage is said to ascend, or go to ascendants.

ASCENDING, in astronomy, is said of such stars as are rising above the horizon in any parallel of the equator. And thus likewise,

ASCENDING LATITUDE, is the latitude of a planet, when going towards the north pole.

ASCENDING NODE, is that point of a planet's orbit, wherein it passes the ecliptic, to proceed northward. This is otherwise called the northern node, and represented by this character ☊.

ASCENDING SIGNS, among astrologers, are those which are upon their ascent, or rise, from the nadir, or lowest part of the heavens, to the zenith, or highest.

ASCENDING VESSELS, in anatomy, those which carry the blood upwards; as the aorta ascendens. See ANATOMY.

ASCENSION, an island of the Atlantic, in S. lat. 8° 8', and W. long. 14° 28', lately taken possession of by Great Britain, with a view to the better defence of St. Helena. Prior to this it was wholly uninhabited. The island, which has an excellent harbour, is ten miles in length from north-west to south-east, and from five to six in breadth. A flag officer resides here, on the single spot which presents a vegetable mould, in the south-east corner of the island: and homeward bound vessels from the Cape of Good Hope and the East Indies call here, under certain regulations. Plenty of fish and sea-fowl are found on the shores, and some fine turtle. ASCENSION is evidently a volcanic production; at a distance it has the appearance of an immense sugar-loaf arising out of the sea, but on approaching it the top is broken into various barren peaks.

ASCENSION, in astronomy, is either right or oblique. Right ascension of the sun, or a star, is that degree of the equinoctial, counted from Aries, which rises with the sun or star in a right sphere. Oblique ascension is an arch of the equator intercepted between the first point of Aries and that point of the equator which rises together with a star in an oblique sphere.

To find the right ascension of the sun, stars, &c. by trigonometry, say, as the radius is to the cosine of the sun's greatest declination, or obliquity of the ecliptic; so is the tangent of the sun's or star's longitude to the tangent of the right ascension. To find the ascensional difference, you must have the latitude of the place, and the sun's declination given: then say, as the radius is to the tangent of the latitude; so is the tangent of the sun's declination to the sine of the ascensional difference sought. This, converted into time, shows how much he rises before, or sets after, six o'clock; by subtracting which from the right ascension, when the sun is in the northern signs, and adding it when he is in the southern ones, you will find the oblique ascension.

Ascension Day; the day on which the ascension of our Saviour is commemorated, commonly called Holy Thursday; the Thursday but one before Whitsuntide.

Ascensional Difference, is the difference between the right and oblique ascension of the same point to the surface of the sphere. The ascensional difference of the sun, converted into time, is just so much as he rises before or after six o'clock.

ASCENSIONIS, in ichthyology, a species of perca, found about Ascension Island; color reddish above, whitish beneath, the tail bifurcated.

Ascent, in logic, denotes a kind of argument, wherein we rise from particulars to universals: as, when we say, this man is an animal, and that man is an animal, and the other man, &c. therefore every man is an animal.

Ascent, in physics, implies the motion of a body upwards, or the continual recess of a body from the earth. The Peripatetics attributed the spontaneous ascent of bodies to a principle of levity inherent in them. The moderns deny spontaneous levity; and show, that whatever ascends, does it in virtue of some external impulse or extrusion. Thus smoke and other rare bodies ascend in the atmosphere; and oil, light woods, &c. in water; not by any internal principle of levity, but by the superior gravity or tendency downwards of the parts of the medium where they are. The ascent of light bodies in heavy mediums is produced after the same manner as the ascent of the lighter scale of a balance. It is not that such scale has an internal principle whereby it immediately tends upwards; but it is impelled upwards by the preponderancy of the other scale; the excess of the weight of the one having the same effect, by augmenting its impetus downwards, as so much real levity in the other; because the tendencies mutually oppose each other, and that action and re-action are always equal.

ASCERTAIN′, Ascertain′ment. Old Fr. *acertener*, from *ad* and *certum*, *cerno*; gr. *κρινω*, to distinguish, to separate. To be sure or certain, to discover the truth, to bring inquiries to a satisfactory result.

> The divine law both *ascertaineth* the truth, and supplieth unto us the want of other laws. *Hooker.*
>
> Money differs from uncoined silver in this, that the quantity of silver in each piece is *ascertained* by the stamp. *Locke.*
>
> Right judgment of myself may give me the other certainty; that is, *ascertain* me, that I am in the number of God's children. *Hammond's Practical Catechism.*
>
> This makes us act with a repose of mind, and wonderful tranquillity; because it *ascertains* us of the goodness of our work. *Dryden's Dufresnoy.*
>
> He tells us that the positive *ascertainment* of its limits, and its security from invasion, were among the causes for which civil society itself has been instituted. *Burke on the Revolution in France.*
>
> The characters of great men, which are always mysterious while they live, are *ascertained* by the faithful historian, and sooner or later receive their wages of fame or infamy, according to their true deserts. *Cowper's Letters.*

ASCESIS, from the verb *ασκειν*, used by the ancients in speaking of the sports and combats of the athletæ, properly denotes exercise of the body. It is also used by philosophers, to denote an exercise conducive to virtue, or to the acquiring a greater degree of virtue. This is particularly denominated the philosophical ascesis, because practised chiefly by philosophers, who make a more peculiar profession of improving themselves in virtue; on the model of which the ancient Christians introduced a religious ascesis.

ASCETERIUM, in ecclesiastical writers, a monastery, or place set apart for the exercises of religion. The word is formed from ascesis, exercise; or ascetra, one who performs exercise. Originally it signified a place where the athletæ or gladiators performed their exercise.

ASCET′ICK, *n.* & *adj.* Ascet′icism. *Ασκετικος*, *ασκεω* to exercise. Applied primarily to those who exercised themselves in religious contemplations and for this purpose separated themselves from the world.

> None lived such long lives as monks and hermits; sequestered from plenty, to a constant *ascetick* course of the severest abstinence and devotion. *South.*
>
> I am far from commending those *asceticks*, that out of a pretence of keeping themselves unspotted from the world, take up their quarters in deserts. *Norris.*
>
> He that preaches to man, should understand what is in man; and that skill can scarce be attained by an *ascetick* in his solitudes. *Atterbury.*
>
> The truth is we have seen, and yet do see, religious societies whose religious doctrines are so little serviceable to civil government that they can prosper only on the ruin and destruction of it. Such are those which teach the sanctity of celibacy and *asceticism*. *Warburton's Alliance*, book ii.

Ascetics, persons in the primitive times who devoted themselves to the exercises of piety, in a retired life, and particularly to prayer, abstinence, and mortification. Afterwards this title was bestowed upon the monks, especially such of them as lived in solitude. This is also a title of several books of spiritual exercises, as the Ascetics, or devout exercises of St. Basil, archbishop of Cæsarea in Cappadocia, &c.

ASCHAFFENBURG, a town and district of Germany, on the Maine, formerly belonging to the elector of Mentz, who had a palace there, but now included in the kingdom of Bavaria. It is memorable for being the place where king George II. took up his quarters the night before the battle of Dettingen. It stands on an eminence, in a delightful country, and is of a quadrangular form. The number of inhabitants in the town is about 6400; they received a considerable augmentation by the emigrations from Mentz, on the occupancy of that city by the French in 1798. It has four churches, and a foundation called Insignis Collegiata, the capuchin monastery; the ancient Jesuits' college is now a lyceum or public school. Aschaffenburg was taken by the French in July 1796, and again in 1800. The rivulet of this name here discharges itself into the Maine. This town is eighteen miles south-east of Frankfort, and forty east of Mentz.

ASCHAM (Roger), was born at Kirby-Wiske, near North Allerton, in Yorkshire, in the year

1516. His father was steward to the noble family of Scroop. Roger was educated in the family of Sir Anthony Wingfield, who, about the year 1530, sent him to St. John's College, Cambridge, where he was soon distinguished for his application and abilities. He took his degree of A. B. at the age of eighteen; was soon after elected fellow of his college; and in 1536 proceeded A. M. In 1544 he was chosen university orator; and, in 1548, was sent for to court to instruct the lady Elizabeth (afterwards queen) in the learned languages. In 1550 he attended Sir Richard Morysine, as secretary, on his embassy to the emperor Charles V., at whose court he continued three years, and in the mean time was appointed Latin secretary to Edward VI. But upon the death of that prince, he lost his preferment and all his hopes, being professedly of the reformed religion; yet, contrary to his expectations, he was soon after, by the interest of his friend lord Paget, made Latin secretary to the king and queen. In June 1554 he married Mrs. Margaret How, with whom he had a considerable fortune. It is very remarkable, that, though Mr. Ascham was known to be a protestant, he continued in favor, not only with the ministry of those times, but with queen Mary herself. Upon the accession of Elizabeth, he was confirmed in his post of Latin secretary, and resumed his employment as preceptor to her majesty in the learned languages. He died in 1568, not rich, but much regretted, especially by the queen. He wrote, 1. Toxophilus. The schole or partitions of shooting, contayned in two bookes, written by Roger Ascham, 1544, and now newly perused. Pleasaunt for all gentlemen and yeomen of England, &c. Lond. 1571. This treatise was dedicated to Henry VIII. who settled a pension of £10 per annum upon the author. It is said to have been written principally to promote the improvement of English prose. 2. A Report of the affairs and state of Germany, and the emperor Charles his court, &c. 4to. 3. The Schoolmaster: first printed in 1573, 4to. Mr. Upton published an edition with notes, in 1711. It has uncommon merit. 4. Latin epistles; first published by Mr. Grant in 1576: the best edition is that of Oxford in 1703. These are much admired on account of the style, and esteemed almost the only classical work of the kind written by an Englishman. 5. Apologia contra Missam, 1577, 8vo. His works were collected and published by Bennet, in one volume, 4to. 1769, with a life, by Dr. Johnson.

ASCHERSLEBEN, the chief town of a district in the principality of Halberstadt, Prussia, is seated between the Eine and Wipper, sixteen miles south-east of Halberstadt. It was formerly a Hanse town, and the capital of the principality of Ascania, but was annexed to Halberstadt in the year 1320. Here are manufactures of frieze and flannel; and the suburbs, one of which is called the New Town, are well built. Inhabitants about 8000; and here are a Lutheran and Calvinist school; four churches, one of which, called the Market church, is possessed by the two sects in common. The castle is in ruins.

ASCHILLIUS, king of the Dacians, one of those monarchs, who is said to have assisted king Arthur in his wars.

ASCIA, in antiquity, an instrument supposed to be of the axe kind, used in the fabric of the Roman tombs, and frequently represented on them.

Ascia, in surgery, is a kind of bandage, somewhat oblique or crooked; whose form and use are described by Sculteus, in his Armam. Chirug.

ASCIBURGIUM, in ancient geography, supposed to be one of the fifty citadels built on the Rhine, is mentioned by Tacitus, who adds, that some imagine it was built by Ulysses. Here was a Roman camp and a garrison. To its situation on the banks of the Rhine answers a small hamlet, now called Asburg.

ASCIDIA, a genus of animals belonging to the order of vermes mollusca. The body is cylindrical, and fixed to a shell, rock, &c. It has two apertures, one on the summit, the other lower, forming a sheath. These creatures have the power of contracting or dilating themselves; most of them are sessile. Gmelin enumerates the following species: papillosa, gelatinosa, intestinalis, quadridentata, rustica, echinata, mentula, venosa, prunum, conchilega, parallelogramma, virginea, canina, patula, aspersa, scabra, orbicularis, corrugata, lepadiformis, complanata, tuberculum, villosa, clavata, pedunculata, mammillaris, globularis, phusca, gelatina, crystallina, octodentata, patelliformis, pyura, aurantium, globularis.

ASCINDOE, in botany, a name given by the people of Guinea to a shrub, which they use in medicine, boiling it in water, and giving the decoction in gonorrhœas, and the like complaints. Petiver has named it the prickly Guinea shrub. The thorns on the large branches are very strong.

ASCITÆ; from *ασκος*, a bag or bottle; in antiquity, a sect of Montanists, who appeared in the second century; so named, because they introduced a kind of Bacchanals into their assemblies, who danced round a bag or skin blowed up; saying, they were those new bottles filled with new wine, whereof our Saviour makes mention, Matth. ix. 17.—They are sometimes also called Ascodrogitæ.

ASCITES; from *ασκος*, a water bottle; in medicine, dropsy of the belly; so called from the protuberance of the belly in that disease resembling a bottle. It is divided into two species, ascites abdominalis, in which there is a regular and equal intumescence of the abdomen; and ascites saccatus, when the ovaries, &c. are the seat of the disease, and the swelling, at least in the beginning, is partial. The cure is difficult, since the disease is often only the symptom of a decaying constitution; evacuations are the chief palliatives, and paracentesis (*παρακεντεω*, to perforate), or tapping, relieves for a time, and, in some cases, permanently. See MEDICINE.

ASCLEPIA, a festival of Æsculapius the god of physic, observed particularly at Epidaurus, where it was attended with a contest between the poets and musicians, whence it was likewise called *Ιερος αγιων*, the sacred contention.

ASCLEPIAD, in ancient poetry, a verse composed of four feet, the first of which is a spondee, the second and third choriambuses, and the last a pyrrhichius: or of four feet and a cæsura, the first a spondee, the second a dactyl, after which comes the cæsura, then the two dactyls; as

Mæcē|nās ătăvīs | ēdĭte | rēgĭbŭs.
O ēt | præsĭdĭ|um | dūlcĕ dĕ|cūs mĕŭm.

ASCLEPIADES, a celebrated physician among the ancients, was a native of Prusa, in Bithynia, and practised physic at Rome, about A.C. 96. He was the head of a new sect; and, by prescribing wine and cold water in the cure of the sick, acquired a very great reputation. He wrote several books, frequently mentioned by Galen, Celsus, and Pliny; but they are now lost.

Asclepiades, a famous physician under Adrian, of the same city with the former. He wrote on the composition of medicines, both internal and external.

ASCLEPIAS, Swallow-Wort, in botany, a genus of the digynia order, and pentandria class of plants; ranking in the natural method under the thirtieth order, contortæ. The generic character is taken from five oval, concave, hornlike nectaria, which are found in the flower. There are nineteen species, of which the following are the most remarkable, viz. 1. A. alba, or common swallow-wort. 2. A. curassavica, or bastard ipecacuanha, a native of the warm parts of America. 3. A. Syriaca, or greater Syrian dogsbane. The root of the first species is used in medicine. Though reckoned by botanists a species of dogsbane, it may be distinguished from all the poisonous sorts, by its yielding a limpid juice. The root has a strong smell, especially when fresh, approaching to that of valerian, or nard; the taste is at first sweetish and aromatic, but soon becomes bitterish, subacrid and nauseous. It is esteemed sudorific, diuretic, and emmenagogue. It is also frequently employed by the French and German physicians as an alexipharmic, and sometimes as a succedaneum to contrayerva, whence it has received the name of contrayerva Germanorum.

ASCLEPIODORUS, a British prince who flourished in the third century. He killed Allectus the Roman general, who had slain the celebrated Carausius; and was elected king of the Britons, A. D. 232. He besieged and took London from the Romans, and threw Livius Gallus the Roman general into a brook, which thence received the name of Gallbrook, since changed into Wallbrook. He was at last slain by Coilus II. king of the Britons, A. D. 260.

ASCOBOLUS, in botany; from ασκος, a skin, and βολος, a cast; so called because the seeds are thrown out with elasticity; class, cryptogamia fungi. Its essential characters are, receptacle, fleshy, hemispherical; seed-cases oblong, discharged elastically; seeds moist, about eight. 1. A. furfuraceous, powdery ascobolus. Common on cow-dung late in autumn. 2. A. carneus, flesh-colored ascobolus; found on dung in woods, rare. 3. A. glaber, smooth brown ascobolus, on cow-dung in autumn. 4. A. immersus, sunk ascobolus; in the same situations, almost entirely sunk in the dung, so that the seed-cases only are prominent.

ASCODUTÆ, in church history, a sect of Christians, in the second century, who rejected all use of symbols and sacraments, on this principle, that incorporeal things cannot be communicated by things corporeal, nor divine mysteries by any thing visible.

ASCOGEPHYRUS, in writers of the middle age, a bridge supported on bags made of leather, or bullocks' hides. Such bridges appear to have been in use among the ancients, and to have given the denomination to a tribe of Arabs, hence called Ascitæ.

ASCOLI, anciently called Asculum Picenum, a pretty large and populous town of Italy, in the marquisate of Ancona, and territory of the church. It is a bishop's see, and seated on a mountain between the rivers Tronto and Castellano, forty-eight miles south of Ancona.

Ascoli di Satriano, formerly called Asculum Apulum, and Asculum Picenum, a city of Naples, in the Capitanata, with a bishop's see under the archbishop of Benevento, seventy miles east of Naples, and thirty west of Manfredonia.

ASCOLIA, in Grecian antiquity, a festival celebrated by the Athenian husbandmen in honor of Bacchus, to whom they sacrificed a he-goat, and made a foot-ball of his skin, because that animal destroys the vines. See *Virgil, Georg.* ii. 380.

ASCONIUS Pedianus, an ancient grammarian of Padua; and, according to Servius, an acquaintance of Virgil's. He wrote commentaries on Cicero's Orations, fragments of which are published in Cicero's works.

ASCOPHORA, in botany; from ασκος, bladder, and φερω, to bear; class cryptogamia fungi. Its essential characters are, thread-shaped, terminating in a slightly inflated head. There is but one species, viz. A. perennis, perennial bladder-mould.

ASCORCA, a town and valley of Majorca, six leagues from Palma, principally known by its famous sanctuary, Nuestra Senora de Lluch. This is a large and beautiful edifice, containing an image of the virgin, said to have been miraculously discovered on the spot in 1238. The number of persons connected with this establishment is 400. The canons are proprietors of the valley, which abounds in wine and olives.

ASCOUGH (William), L. L. D. appointed bishop of Salisbury in 1438, and soon after confessor to king Henry VI. He was seized by the famous rebel Jack Cade on the 28th June, 1450, who, after plundering his carriage, fell upon him the next day, while he was officiating at the altar, in Edington, Lincolnshire, and dragging him to a neighbouring hill dashed out his brains.

ASCRA, a village of ancient Greece near Mount Helicon, the birth place of the poet Hesiod.

ASCRI'BE,
Ascri'bable,
Ascrip'tion.
Ascripti'tious.
Lat. *ad scribo*, to write to. Primarily to practice the art of writing on any substance and with any instrument. Subsequently to charge, attribute, or place to the account of any one, whether in writing or otherwise.

Oh! ye traitours and maintainers of madness,
Unto your foly I *ascribe* all my paine;
Ye haue me depriued of ioy and gladnesse,
So dealing with my lord and soueraine.

Chaucer. Lamentation of Marie Magdalene, fol. 319. ch. iv.

True wisdom teaches to distinguish God's actions, and to *ascribe* them to the right causes.

Hall's Contemplations.

Ascribe thou nation, every favour'd tribe,
Excelling greatness to the Lord *ascribe*;
The Lord, the rock on whom we safely trust,
Whose work is perfect, and whose ways are just.

Parnell. The Gift of Poetry.

The cause of his banishment is unknown; because he was unwilling to provoke the emperor, by *ascribing* it to any other reason than what was pretended. *Dryden.*

To this we may justly *ascribe* those jealousies and encroachments which render mankind uneasy to one another. *Rogers.*

These perfections must be somewhere; and therefore may much better be *ascribed* to God, in whom we suppose all other perfections to meet, than to any thing else. *Tillotson.*

The greater part have been forward to reject it upon a mistaken persuasion; that those phenomena are the effects of nature's abhorrency of a vacuum, which seem to be more fitly *ascribable* to the weight and spring of the air. *Boyle.*

Sometimes we *ascribe* to ourselves the merit of good qualities, which if justly considered should cover us with shame. *Craig.*

Holiness is *ascribed* to the pope; majesty to kings: serenity or mildness to princes; excellence or perfection to ambassadors; grace to archbishops; honor to peers. *Addison.*

The innocent gambols of a few otters, have been known to occasion those yells which the vulgar of this country mistake for laughing or crying, and *ascribe* to a certain goblin, who is supposed to dwell in the waters, and to take delight in drowning the bewildered traveller. *Beattie.*

ASCRIPTI, or ADSCRIPTI, in antiquity, those who entered their names in the colonies, and became coloni.

ASCRIPTITII, or ADSCRIPTITII, in ancient barbarous customs, a kind of villains, who, coming from abroad, settled in the lands of some new lord, and became so annexed to the lands that they might be transferred and sold with them. Ascriptitii is sometimes also used in speaking of aliens or foreigners newly admitted to the freedom of a city or country.

ASCRIPTITII was used in the military laws for the recruits to supply the legions, called also ACCENSI, which see.

ASCRIVIUM, in ancient geography, a town of Dalmatia, on the Sinus Rhizicus, now called Cattaro, in Venetian Dalmatia.

ASCULUM APULUM, and PICENUM. See ASCOLI.

ASCUS, in natural history, the pouch or bag of the opossum, for receiving its young. It is a skinny bag, separate from the rest of the body, but adhering by a membrane to the bottom of the belly.

ASCYRUM, PETER'S WORT, in botany, a genus of the polyandria order, and the polyadelphia class of plants, ranking in the natural method under the twentieth order, rotaceæ: CAL. four leaves: COR. four petals; the filaments are numerous, and divided into four bundles. There are three species: 1. A. crux andreæ; 2. A hypericoides; 3. A. villosum; all natives of the West-Indies, or America.

ASDRUBAL, the name of several Carthaginian generals. See CARTHAGE.

ASEKAI, ASEKI, the name which the Turkish emperors give to their favorite sultanas, generally those who have brought forth sons. These are greatly distinguished above others in their apartments, attendants, pensions, and honors. They have sometimes shared the government. The sultana who first presents the emperor with a male child is reckoned the chief favorite, and is called buyuk aseki.

ASELE-LAPPMARK, a division of Swedish Lapland, contains the large parish of Asele, sixty English miles in length. In the town of this name there is a church, erected in 1648. Here is also a school, established in 1730, where six children of Laplanders are educated at the expense of the government. This place is moreover the seat of a court of justice, and has a yearly fair. The inhabitants trade in rein-deer skins, flesh, butter, cheese, fowls, fish, and furs. Eighty-five miles west of Umea. Long. 17° 4' E., lat. 64° 12' N.

ASELLA, in entomology, a species of phalæna, of the bombyx family, found in Germany, wings brownish without spots.

ASELLI, in astronomy, two fixed stars of the fourth magnitude, in the constellation Cancer.

ASELLI or ASELLIUS (Caspar), an Italian anatomist of the seventeenth century, who distinguished himself by discovering the lacteal vessels. He was born at Cremona, and studied medicine, and became professor of anatomy in the university of Pavia. Aselli first observed the lacteals in dissecting a living dog. His investigations were published after his death at Milan in 1627.

ASELLINA, in zoology, a species of Lernæa, having the body lunated, and the thorax heart-shaped. Found fixed on the gills of some fishes.

ASELLUS, in entomology, a species of the oniscus genus; of an oval shape, with an obtuse tail, furnished with two styles. It delights in moist places, under stones, in damp and rotten wood, &c. The young are contained in a four-valved receptacle, under the abdomen of the female. This is commonly known by the name of the wood louse.

ASELLUS, in conchology, a species of chiton, most frequently found adhering to the mytilus modielus. The shell consists of eight valves, very black, with a yellow spot on each valve, convex above; also a species of cypræa, common about the Madeira islands. It is white, with three brown bands bordered with yellow or red.

ASENATH, the daughter of Potipherah, priest or prince of On, and wife of Joseph, prime minister to Pharaoh king of Egypt. See Genesis xli. 45.

ASEPTA; in medicine, from α negative, and σηπω, to putrefy; signifies any thing unputrefied, or unconcocted.

ASGILL (John), a humorous writer, bred to the law, which he practised in Ireland with great success. He was there elected a member of the house of commons, but was expelled for writing a Treatise on the Possibility of avoiding Death. Being afterwards chosen member for Bramber in Sussex, he was on the same account expelled the parliament of England. After this, he continued thirty years a prisoner in the Mint, Fleet, and King's Bench; during which time he published a multitude of political pamphlets. He died in the King's Bench in 1738, aged above eighty.

ASH', *n* .& *v*. }
Ash'y, }
Ash'tub, }
Ash'ypale. } Ang.-Sax. Asia, asce; dust, ashes. The remains of any substance which has been burnt.

Ye Troyan *ashes*, and last flames of mine,
I cal in witnesse, that at your last fall,
I fled no stroke of any Grekish sword. *Surrey.*

Poor key-cold figure of a holy king!
Pale *ashes* of the house of Lancaster!
Thou bloodless remnant of that royal blood!
Shakspeare.

So that lone bird in fruitful Arabie,
When now her strength and waning life decays,
Upon some aerie rock or mountain high,
In spiced bed, fired by near Phœbus rayes,
Herself and all her crooked age consumes,
Straight from the *ashes*, and those rich perfumes,
A new-born phœnix flies, and widow'd place resumes.
Fletcher's Purple Island.

Porneius next him pac'd, a meagre wight,
Whose leaden eyes sunk deep in swimming head,
And joyless look, like some pale *ashy* sprite,
Seem'd as he were dying, or now dead. *Id.*

His *ashy* coat that bore a gloss so fair,
So often kiss'd of the enamour'd air,
Worn all to rags, and fretted so with rust,
That with his feet he trod it into dust.
Drayton's Poems. The Owl.

Ah! leave me not for Grecian dogs to tear;
The common rites of sepulture bestow,
To soothe a father's and a mother's woe;
Let their large gifts procure an urn at least,
And Hector's *ashes* in his country rest. *Pope.*

To great Laertes I bequeath
A task of grief, his ornaments of death;
Lest, when the fates his royal *ashes* claim,
The Grecian matrons taint my spotless name. *Id.*

Ash, }
Ash'en. } Of doubtful etymology. Todd's Johnson gives æpe, a tree.

There sawe I eke the fresh hauthorne,
In white motley that so swote doth smell,
Asshe, firre, and oke with many a young ac
And many a tree mo than I can tell.
Chaucer. The Complaint of the Black
f. 271. c. 1.

For whan we may not don, than wol we spe
Yet in our *ashen* cold is fire yreken.
Id. The Reve's Prologue, v. i.

As from some far seen mountain's airy crow
Subdu'd by steel a tall *ash* tumbles down,
And soils its verdant tresses on the ground;
So falls the youth; his arms the fall resoun
Pope.

Then exercise thy sturdy steers to plough
Betwixt thy vines, and teach the feeble row
To mount on reeds, and wands, and upward
On *ashy* poles, to raise their forky head.
Dryden's Virgil, Ge

Ash (John), L.L.D. a baptist minister in 1724; was at one period coadjutor wi Caleb Evans in the management of the academy, and subsequently pastor of a con tion at Pershore, where he died in 1779. E several religious publications, he was the of a Dictionary of the English languag an Introduction to Lowth's Grammar, whi passed through a great number of editions.

ASHA'ME, }
Asha'med. } Found in all the No languages. It has perh literal affinity to αισχυνω, to blush, to re although, according to our usage, it mea feeling that occasions the blush; to feel See Shame.

And whanne he seide these thingis alle his saries weren *ashamed*: and al the puple joyede thingis: that weren gloriously don of him.
Wiclif. Luk

Some men seem to be *ashamed* of those which would be their glory, whilst others gl their *shame*. *Mason on Self-kn*

Ye only can engage the servile brood
Of levity and lust, who all their days
Ashamed of truth and liberty have woo'd,
And hug'd the chain that glittering on their
Seems to outshine the pomp of heaven's en
blaze. *Beattie's M*

The modest speaker is *asham'd* and griev'
T'engross a moment's notice, and yet beg
Begs a propitious ear for his poor thought
However trivial all that he conceives.
Cowper'

ASHANTEE.

ASHANTEE, a native kingdom of the Gold Coast of Africa, and an important power in the neighbourhood of our settlements on the western coast. It appears to be far superior in civilisation, commerce, and general resources, to any known African state. The predominance of this power indeed has, within the last ten years, entirely altered the political aspect of the coast. It is well known that our late excellent and intrepid commander on this coast, and at Sierra Leone (Sir Charles Macarthy), lost his life in a fruitless attempt to drive back a considerable force of the Ashantees from the Gold Coast. A late war between the Fantees and the king of Ashantee first brought the latter country to the knowledge of Europeans. The Fantees had long plundered the Ashantee merchants, and treated with contempt the remonstrances of tha dom, till at last the Ashantees over-r country, entirely reduced the Fantees, a sieged the British settlement. A missio now therefore sent to the king of Ashan conciliate his good-will toward this coun obtain, if possible, an extension of com and to gain a knowledge of that kingdor the adjacent countries.

Ashantee, according to the elaborate a of Mr. Bowdich, employed on this miss situated at a distance from the coast, on th of Dahomy, and nearly in the longitude central parts of England. Its extent is su to be great, though still imperfectly kno Europeans, and must, indeed, be so i measure to the inhabitants themselves.

no records are kept, and the communications are only received from those who levy the tribute, no great accuracy can be expected, either as it relates to extent of country or number of inhabitants. It spreads principally over a wide space westward and towards the interior. Ashantee Proper does not border on the coast which is occupied by the tributary countries. The surface of this country is variegated, but the cultivation is partial, and much of it is over-run with forests of brush-wood, and the luxuriance of a tropical vegetation. A river called the Volta is formed of two streams which intersect the Ashantee territory. South-east of Coomassie, the capital, a small lake is laid down in Mr. Bowdich's map. No means of ascertaining the population presented itself to the members of the mission, but by that of the military force. Of this they give the following, as the most moderate estimate received:

Coomassie district, extending to the northern frontier	60,000
Dwabin ditto	35,000
Marpon ditto	15,000
Soota ditto	15,000
Kakoofoo ditto	15,000
Beequa ditto	12,000
Miahin ditto (between Coomassie and the lake)	12,000
Aghwagwiasee ditto	10,000
Daniasee ditto (southward of Coomassie)	8,000
Koontarasie ditto (on the lake)	8,000
Gomasie ditto	8,000
Amafas ditto	8,000
	206,000

The Ashantees being a nation of warriors, this statement may amount to nearly one-fifth of the whole population, which will, therefore, be about one million. The area of Ashantee Proper is estimated by the same writer at 14,000 square miles, which is consequently about seventy-one persons to each; a population rather greater than that of Scotland. The climate of Ashantee is colder than that of Cape Coast. During May and June, the first two months that the mission was at Coomassie, it rained about one-third of the time; in July and August, it rained nearly half, and violent tornadoes, ushered in by strong winds from the south-west, were frequent after sun-set. The heaviest rains fell from the latter end of September to the beginning of November, when they descended in more impetuous torrents than are usual on the coast. On the second of May Fahrenheit's thermometer rose to 91°, and the following day, at twelve o'clock, it was [illegible]°. From the 7th to the 14th of June, it varied at Coomassie from 80° to 85°. It appears that the general temperature of Coomassie, during the hottest part of the day, is between 70° and 84°.

The agriculture and products are similar to those of other parts of south-west Africa. The soil is chiefly a light loam, and the only agricultural instrument is the hoe. Their plantations have much the appearance of hop-grounds, are well formed and regularly planted; a hut being erected at each wicker-gate where a slave and his family generally reside. They grow two crops of corn a year; plant their yams about Christmas, and dig them up in September. They also cultivate rice, sugar-canes, a mucilaginous vegetable, called encruma, resembling asparagus, pepper, vegetable butter, oranges, papaws, pine-apples, and bananas. Fine cotton also grows spontaneously in Ashantee. The cattle seen by the embassy were as large as those in England. The horses are small, and the Ashantees bad horsemen. The Moors sometimes ride oxen with rings through their noses. The sheep are covered with hair. Among the wild animals are lions, panthers, elephants, hyænas, goats, deer, and antelopes; besides abundance of the monkey species: of these, the simia diana, is much admired for the beauty of its skin. The alligator, rhinoceros, and hippopotamus, are also met with; among the birds vultures are numerous, as well as pigeons, crows, and parrots. Various singing birds were likewise seen. Ashantee either is not a mineral country, or the inhabitants cannot avail themselves of its treasures, as the gold and other metals are imported. Iron-stone, however, is found in several places, and particularly in the neighbourhood of Coomassie, the metropolis, which is built upon the side of a large rocky hill, and is insulated by a marsh northward. This marsh contracts into a narrow stream on the southern and eastern sides, and supplies the town with water. Around the town is a beautiful forest. Coomassie is an oblong of nearly four miles in circuit, not including the suburbs of Assafoo, or Bantama (the black town), half a mile distant, and formerly connected with the streets. Four of the principal of these streets are half a mile long, and from fifty to a hundred yards wide. Mr. Bowdich observed them building one, and a line was stretched on each side to make it regular. The streets are all named, and a superior captain has charge of each. That where the mission resided was called Aperremsoo, great-gun, or cannon-street, because the guns taken when Dankara was conquered, were placed on a mound at the top of it. The Ashantees asserted that the entire population of Coomassie exceeded 100,000; and Mr. B. says, that on festivals, when the people were collected, he compared the crowds to those he had seen in the secondary cities of England. The higher classes support their numerous followers, and the lower their large families, in plantations within two or three miles of the capital. Mr. B. thinks the average resident population of Coomassie, exclusive of those of the surrounding crooms, does not exceed 15,000. There are two markets held daily, from about eight o'clock in the morning till sunset, where the articles exhibited for sale, are beef and mutton, hogs, deer, and monkey's flesh; fowls, with the vegetable products of the country; salt and dried fish from the coast, large snails smoke-dried, and stuck in rows on small sticks in the form of herring-bone; eggs for fetish, palm-wine, rum, pipes, beads, looking-glasses, sandals, silk and cotton cloth, gunpowder, small pillows, white and blue cotton thread, calabashes, &c. Provincial capitals, and other large towns of the rterior. were spoken of to the gentlemen of the mission. but were little known, it appeared, at the capital.

The king's love of justice is esteemed by his courtiers as his chief virtue. They have no ideas of extending their influence by civil policy. The cefoceers, or military captains, accordingly form the lowest grade of the constitution, over whom are placed the heads of but four families, which form a sort of aristocracy, and, with the king, complete the three estates of this kingdom. In exercising his judicial authority, or in laying the basis of a new law or measure, the king always retires in private to consult these four chief dignitaries; but every law is announced publicly to them as well as to the assembly of captains, as the arbitrary pleasure of the king. On state emergencies only, are the latter assembled distinctly, or to give publicity to some new law. The Ashantees are fully capable of vindicating this constitution by argument, according to the testimony of our officers who visited the court of Coomassie; indeed, no system of government would seem better suited to their habits and propensities. The captains are made responsible, in a great degree, for the issue of their own advice with respect to war or peace; we only wish we could add, that in their mode of conducting hostilities, they were as humane as they are energetic and skilful.

In this respect, they are still barbarous in the highest degree. They rarely give quarter in a general action, and a distinct body of recruits follows the army to despatch with knives those who are wounded with a musket, and return with the personal spoil of the enemy. They even make a practice of cutting out the hearts of some of the slain, which they mix up with consecrated herbs, and after much ceremony and incantation, compel those who have never before killed an enemy, to eat part of the horrible portion. Of the heart of a celebrated enemy, the king and his dignitaries are said to partake; and their most warlike generals are distinguished by names descriptive of their peculiar modes of despatching or torturing their enemies. Thus, Apokon, the king, is called Aboåwessa, because he has been in the habit of cutting off their arms; Appia, Sheäboo, because he beats their heads in pieces with a stone; and Amanqua, Abiniowa, because he cuts off their legs. Sir Charles M'Carthy, it is feared, was despatched by these barbarians in this cruel manner.

The last power subdued, or the revolters recently quelled, are always compelled by the Ashantees to form the van of their army; the youngest captain marches first, and all the authorities in gradation of rank and seniority up to the king. The superior discipline and courage of their soldiery were in a moment perceptible, when they appeared in conflict with the people of the coast before Annamaboe; but the following are said to be the only maxims to which this is to be attributed: They never pursue an enemy at or near sunset; the general is always in the rear, the secondary captains lead the soldiers on, while the chiefs of divisions, surrounded by a few select followers, urge them forward with heavy swords, and cut down every man who retreats, until the conflict is desperate. In close fight, the principal effort of the Ashantee is to fire, and then spring upon the throat o his enemy. The most popular song of the capital, has a sort of chorus to this effect: 'If I fight I die, if I run away I die, better I go and die.'

At the Yam Custom, an annual festival, and at the death of their great men, hundreds of human victims are said to be regularly sacrificed, and the sculls and other bones of their enemies are exhibited in their armoury, and as the ornaments of their state apartments. At all their great festivals and funerals, indeed, the slaughter of human beings is horribly frequent. Some of the former occur once in three weeks, when 100 are sometimes immolated. It should be observed, however, that these are often convicts. The king celebrated the death of his mother by the sacrifice of 3000 victims; and the funeral rites of a great caboceer were repeated at intervals for three months, during which 2400 persons were butchered.

According to the religious belief of the Ashantees, there are two distinct orders of gods; one of which, the higher order, takes care of the whites, the other of the blacks; they are believers in the immortality of the soul, and both their princes and nobility are supposed to enjoy the presence of the higher order of their deities after death. Here they regale themselves in epicurean indulgence, and have cooks and butlers after the fashion of their country. Persons of this description are, therefore, buried with their great men, whose reception in another world is supposed to be greatly regulated by the number of attendants with which they appear. The Ashantees have also two sets of priests; one class being devoted to the services of their temples and to preserving a communication with their deities, and the other class a sort of conjurors, and detectors of small theft. Every housekeeper also has his domestic gods and charms, bought o these cunning men. Polygamy is universally allowed, and the king claims the royal number of 3333 wives, which is regularly kept up; the ladies living in round enclosures, 'like pheasants in a park.'

A peculiar feature in the law of succession obtains in this country, and is binding from the royal family downwards. The brothers' children are always set aside in favor of sisters children, on the ground that if the sons' wives are faithless, the blood of a family is lost in the offspring; but should the daughters deceive their husbands the father's blood is still preserved thus, the sisters of the king are allowed to intrigue or marry with any personable man. The king is heir to all the gold of any subject, and contributes to the funeral rites to assert his claim the successor paying the debts of the deceased Slaves, if ill treated, may transfer themselves from one master to another. They are a great article of traffic here, and the domestic drudges of course, of the country. No topic appeared so inexplicable to the king as that of the Britis motives for abolishing the slave-trade. Th slaves of an ally or tributary are scrupulous restored; those of an indifferent or enemy country may become free subjects of the state. An appeal lies for the subjects of any tributary power to the laws, and ultimately to the king of Ashantee.

Cowardice, treason, the murder of an equal, and some cases of adultery, are punishable with death, as are false accusations of treason. A great man killing his equal, is generally afterwards allowed to kill himself as a punishment; but the death of an inferior is compensated by a fine, paid to the family, of the value of seven slaves. Serious thefts are punished with a compensation inflicted on the family of the accused, who alone are suffered to punish him; but this they may do even capitally, if he be incorrigible. Trifling thefts are visited on the offender by exposing him at various parts of the town, and proclaiming his crime before him. But all vexatious suits and accusations are discouraged and punished. Polygamy is allowed to all ranks, but the wife's property is distinct from that of her husband, and the king is the heir of it. None but a captain can put his wife to death for infidelity, and even then he is expected to accept a liberal offer of gold for her redemption. To intrigue with the king's wives is death. If the family of a woman, on her complaint of ill-treatment, choose to tender to a man his marriage-fee, he must accept it; and the wife returns to her father's house, but can no more marry. 'The most entertaining delassement of our conversation,' says Mr. Bowdich, 'with the chiefs, was to introduce the liberty of English females; whom we represented, not only to possess the advantage of engaging the sole affection of a husband, but the more enviable privilege of choosing that husband for herself. The effect was truly comic; the women sidled up to wipe the dust from our shoes with their clothes, at the end of every sentence brushed off an insect, or picked a burr from our trowsers; the husbands expressing their dislike by a laugh, would put their hands before our mouths, declaring that they did not want to hear that palaver any more, abruptly changed the subject to war, and ordered the women to the harem.'

The foreign trade of Ashantee is regulated by the government, so far as to interdict commerce with any unfriendly power. It is in every other respect left free, though not much encouraged. The slaves of the capital are generally a part of the annual tribute of the neighbouring powers; but many are kidnapped throughout the country. They fetch but a trifle; but it is the most lucrative branch of their commerce with the coast; and the continuance of it under other flags, particularly the Spanish, while the British are prohibited from engaging in it, is represented by the intelligent writer, to whom we have been already so much indebted, as the most stubborn impediment to the negociations which he had to conduct at Ashantee. 'It not only injures the British commerce here,' says Mr. B. 'almost to annihilation; but, slavery being the natural trade of the natives, because it is the most indolent and the most lucrative, the opposition, which is insinuated and believed to proceed from the English alone, conveys a disagreeable impression of us to the interior, as inauspicious to our intercourse and progress, as the even partial continuance of such a trade is to legitimate commerce and civilisation. One thousand slaves left Ashantee, for two Spanish schooners, or Americans under that flag, to our knowledge, during our residence there; doubtless the whole number was much greater. Since our return it must have been very considerable, for the slave trade was never more brisk than it is at this moment, under the cloak of the Spanish flag; and great risk has been incurred, in consequence, of offending our new friend and formidable neighbour, the king of Ashantee, from the firm resistance of his strong entreaties to the governor-in-chief to allow the return of a powerful mulatto slave-trader to Cape Coast Town, whence he had been expelled under the present governor, as the most daring promoter of that commerce.' How urgently does this press upon government, by all legitimate means, to urge the universal abolition of this accursed traffic! It is but 'crippled,' as this writer well remarks, at present, 'at the expense of our own interests and views in the interior; and, which is worse, of the happiness and improvement of the natives.'

Gold was seen everywhere in great abundance by the British emissaries; and the court of Coomassie, in silks, stuffs, cloths, and cottons, of every hue, was most imposing. Some of the captains wore ornaments of solid gold on their wrists, so large as to tire the hand, which rested on the head of a young slave. The tops of immense umbrellas were decorated with golden heads of pelicans, panthers, baboons, &c. as large as life.

Guns and gunpowder are never allowed to be exported from Ashantee; and the people in general have no idea of buying any thing but for the purpose of consumption, except a small number of articles of which they can make a profitable barter for tobacco, cloth, and silk, in the Inta and Dagwumba markets. Their situation bids fair, however, for their becoming the complete brokers between the interior and the European nations.

We subjoin a table of the most material articles of commerce between our settlement at Cape Coast Castle and the Coomassie market, and the profit they will yield, according to Mr. Bowdich, at the latter:

CAPE COAST.					COOMASSIE.				
Articles.	£.	s.	.	Quantity.	£.	s.	d.	Quantity.	Profit per cent.
1 Cushions	—	—	—	———	1	0	0	each.	100
2 Dagwumba white cotton	—	—	—	———	0	5	0	square yard.	100
3 Flints	0	5	0	100	0	0	½	each.	600
4 Glasgow Dane	1	10	0	per piece.	0	5	0	per handkerchief.	75
5 Guinea stuff	0	10	0	do.	0	15	0	———	50
6 Gunpowder	4	0	0	½ barrel.	0	0	7½	per charge.	400
7 Iron	1	0	0	bar.	1	15	0	bar.	75
8 Lead	0	10	0	———	0	0	7½	½ inch.	75
9 Locks (Marrowa)	—	—	—	———	0	5	0	each.	100
10 Romal	1	0	0	per piece.	1	5	0	piece.	20
11 Rum	0	10	0	gallon.	0	0	7½	dram.	400
12 Sandals	—	—	—	———	0	10	0	pair.	100
13 Sarstracunda	0	10	0	piece.	0	2	6	per span.*	400
14 Silesia	1	10	0	do.	0	15	0	piece.	50
15 Silk, India	4	0	0	do.	0	5	0	per span.	175
16 —— Fezzan	—	—	—	———	2	0	0	per fathom.	100
17 Spanish dollars	0	5	0	———	0	5	0	———	—
18 Tobacco, Portuguese	6	0	0	Roll.	10	0	0	roll.	75
19 ——— Inta	—	—	—	———	0	2	6	lb.	150

* The span is about nine inches long; the fathom eight spans.

Gold dust is the currency of Ashantee, worth about £4 English an ounce. That of the neighbouring kingdoms of Inta, Dagwumba, Gaman, and Kong, is reckoned in cowries, of which five strings, or 200, make a tokoo; eight tokoos an ackie; and sixteen ackies an ounce.

Mr. Bowdich recommends that a British settlement should be attempted up the Volta, which is navigable within four days' journey of Sallagha, the capital of Inta, east of which, and on the banks of Laka river, connected with the Volta, is the kingdom of Dagwumba. These tributary nations to Ashantee are far more commercial in their policy than that state; and, as far as they have become known to us, more civilised. They give exorbitant prices to the Ashantees for rum, iron, &c. Silks, Manchester cloths, and cottons, would find a market in the same direction.

In their architecture the Ashantees have claims to surprising neatness, and even elegance. Although the walls are of mud, every house in Coomassie has its regular gable ends, from which three poles are projected, i. e. from end to end, forming the point and bottom of the roof on each side; in which a frame of bamboo work supports an interwoven thatch of palm leaves, tied with the runners of trees. Within, the bamboo work is painted black and polished, so as to form a sort of chequered and tasty ceiling. The pillars that assist to support the roof, and form the open front of the superior houses, are squared pieces of timber, covered with plastering, and often ornamented with fluting, quarter-foil, and the lozenge and gable ornaments of the Normans. The steps and raised floors of these houses are clay and stone, covered with a layer of red earth which has the appearance of ochre. Arcades and piazzas abound everywhere in the capital. The doors are generally an entire piece of the cotton wood; the windows open wood work, carved in fantastic shapes, and painted red; the frames being frequently cased in gold as thick as cartridge paper. Mr. Bowdich was agreeably surprised to find every house have its cloaca in some retired and arched corner, besides the common ones about the town for the lower orders. The holes, he says, are dug to a surprising depth, and boiling water is poured down them every day. The rubbish and offal of the houses is burnt every morning in the back of the street. In their persons, and in all their domestic economy, the Ashantees are also patterns of cleanliness.

They manufacture cloths of exquisite fineness and brilliancy of color, sometimes unravelling the finest silks, to weave them into them. They paint on white cloths; and dye with considerable skill, particularly leather; in pottery, blacksmith's work, tanning and dressing leather, they also excel. They will buy British cottons for the sake of a favorite stripe (generally the red), and cutting away the other parts, weave it up into their own cloths, which alone are worn as articles of dress.

ASHBORN, or **Ashbourne**, a town in Derbyshire, on the borders of Staffordshire, between the rivers Dove and Compton, thirteen miles from Derby, and 139 N. N. W. from London. It has a stone bridge over the Dove; an ancien church with a fine spire; and a free schoo founded by citizens of London, natives of th place. Its trade in malt and cheese is consider able. A weekly market is held here, and several annual fairs. Population 2112.

ASHBURNHAM, a post town of the United States, in Worcester county, Massachusetts, on the west side of the river Sowhegan, forty-five miles north-west of Boston.

ASHBURTON, a town in Devonshire, seated on the river Dart, ten miles from Totness, nineteen south-west of Exeter, and 192 west by south of London. It carries on a considerable trade, in wool, yarn, and serges; has markets on Tuesday and Saturday, and fairs on the first Thursday, of March and June, and on the 10th August and 11th November. It sends one member to parliament, and is one of the four stannary towns. It is seated among the hills, which abound in tin and copper; and has a very handsome church, with a chapel, which is used as a school. Population above 4000.

ASHBY DE LA ZOUCH, a market town of Leicestershire, so called from the Zouches, its ancient lords, 13 miles south of Derby, 15 from Leicester, and 115 from London. It has seven annual fairs. It long had a castle, which was in the possession of the family de la Zouch. It afterwards fell into the hands of Edward IV. who granted it to Sir Edward Hastings, with the title of a baron, and license to make a castle of the manor-house, to which he adjoined a very high tower. James I. and his whole court were once entertained here by the Earl of Huntingdon. It was demolished in 1648. Malting, and the manufacture of hats and cotton, flourish here. Population upwards of 3000. In the neighbourhood is a mineral water called Griffydam.

ASHDOWN, a town of Essex, anciently called Assandun, or the hill of asses, famous for the defeat of Edmund Ironside, by Canute the Dane.

ASHER; אשר, Heb. i. e. blessedness; one of Jacob's sons by Zilpah, and the progenitor of the tribe so called.

ASHEREF, or ASHRAFF, a town of Persia, in the Mazanderan province, half a mile from a large bay, the best harbour on the south side of the Caspian. Shah Abbas built a superb palace here, surrounded by fine gardens, remarkable for the number of their orange trees. This palace is now falling to ruins. Distant fifteen miles from Ferhabad, and sixteen from Sari.

ASHES, among the ancient Persians, were used as an instrument of punishment for some great criminals. The criminal was thrown head-long from a tower fifty cubits high, which was filled with ashes to a particular height, 2 Mac. xiii. 5, 6. The motion which the criminal used to disengage himself from this place, plunged him still deeper into it, and this agitation was farther increased by a wheel which stirred the ashes continually about him, till at last he was stifled.

ASHES, in chemistry, are the earthy particles of combustible substances after they have been burnt. If the ashes are produced from vegetable bodies, they contain a considerable quantity of fixed salt, blended with the terrene particles: and from these the fixed alkaline salts called pot-ash, pearl-ash, &c. are extracted. See POTASH, &c. The ashes of all vegetables are vitrifiable, and found to contain iron. They are also an excellent manure for cold and wet grounds. See HUSBANDRY.

ASHES were anciently used in several religious ceremonies. St. Jerome relates that the Jews in his time rolled themselves in ashes, as a sign of mourning. To repent in sackloth and ashes is a frequent expression in Scripture for mourning and being afflicted for our sins. There was a sort of lye and lustral water made with the ashes of an heifer sacrificed upon the great day of expiation; the ashes whereof were distributed to the people, and this water was used in purifications as often as any touched a dead body, or was present at funerals, Num. xix. 17.

ASH-FIRE, among chemists, a fire wherein the vessel to be heated is covered with ashes or sand.

ASHI, a prince of Norway, said to have been slain by Fingal, the father of Ossian, at a place of Invernesshire, ever since named Drumashi, or Ashi's Hill.

ASHIMA, an idol of the Samaritans, 2 Kings xvii. 30, said to have been formed like a lion or a goat, and to have represented the sun.

ASHING-KEY, a low island on the Spanish main, on the Mosquito shore.

ASHIPOO, a river of North America, in South Carolina, which runs into the Atlantic. Long. 80° 30′ W., lat. 32° 25′ N. Also a town of the same name situated on the banks of this river.

ASHLAR, in masonry, free-stones as they come out of the quarry, of different lengths, generally applied to slabs of stone, from six to nine inches in thickness, used for facing brick buildings, worked in imitation of regular courses of solid masonry.

ASHLER, or ASHLERING, quartering of timber about three feet high, placed perpendicularly from the floor of the attic story, to the roof to obviate the useless angle formed by the junction of the roof and the floor.

ASHLEY, a river of South Carolina, rising in Cypress swamp, and emptying itself into the Cooper just below Charleston. Its breadth opposite Charleston is about 2100 yards, and its stream narrows but little for several miles. On the western bank of this river the first efficient settlement of the state was made at a place now called Old Town, or Old Charleston, in 1671. Also a river of West Florida, which runs into the Gulf of Mexico.

ASHMOLE (Elias), a celebrated antiquary and herald, founder of the Ashmolean Museum at Oxford, was born at Litchfield, in Staffordshire, 1617. He first practised in the law: in the civil war he had a captain's commission, and was also comptroller of the ordnance under Charles I. In 1649 he settled at London; where his house was frequented by most of the learned men of the age, and a depository of many literary treasures. In 1650 he published a treatise written by Dr. Arthur Dee, relating to the philosopher's stone; with another tract on the same subject by an unknown author. About the same time he was busied in preparing for the press a complete collection of the works of such English chemists, or alchemists rather, as had till then remained in manuscript. This undertaking cost him great labor and expense; but at length the work appeared towards the close of the year 1652, under the title of Theatricum Chymicum Britannicum. He proposed at first to have carried it on to several volumes; but afterwards dropped this design, and applied himself to the study of antiquity and records. He was at great pains to trace the Roman road, which in Antoninus's Itinerary is called Bennevanna, from Weedon to Litchfield. In 1658 he began to collect materials for his celebrated history of the Order of the Garter. In September following he made a journey to Oxford, where he commenced his full and particular description of the coins presented to the public library by archbishop Laud. Upon the restoration, Mr. Ashmole was introduced to king Charles II. who bestowed on him the place of Windsor Herald. Soon after he appointed him to give a description of his medals, which were accordingly delivered into his possession, and king Henry VIIIth's closet was assigned for his use. Mr. Ashmole was afterwards admitted a fellow of the Royal Society; and the king appointed him secretary of Surinam, in the West Indies. On the 19th July 1669, the University of Oxford, in consideration of the many favors they had received from Mr. Ashmole, created him M. D. by diploma. In May 1672 he presented his Institution, Laws, and Ceremonies of the Order of the Garter, to the king, who, as a mark of his approbation granted him £400 out of the custom on paper. On the 26th January, 1679, a fire broke out in the Middle Temple, in the next chamber to Mr. Ashmole's, by which he lost a noble library, with a collection of 9000 coins, ancient and modern, and a vast repository of seals, charters, and other antiquities and curiosities; but his manuscripts, and his most valuable gold medals, were luckily at his house at Lambeth. In 1683, the University of Oxford having finished a magnificent repository near the theatre, Mr. Ashmole sent thither his collection of rarities; which benefaction was augmented by the addition of his manuscripts and library at his death, which happened at Lambeth, May 18, 1692, in the 76th year of his age. Besides the works above mentioned, Mr. Ashmole left several which were published since his death, and some which still remain in manuscript.

ASHMOT, the principal part of the Isle Madame, dependent on the island of Cape Breton.

ASHO'RE. On shore. Ang.-Sax. sciran, to shear, cut, divide, separate. See SHORE.

Sweare then how thou escap'dst.
Swum *ashore* man like a ducke! *Shakspeare.*

——— For now the flowing tide,
Had brought the body nearer to the side;
The more she looks, the more her fears increase,
At nearer sight; and she's herself the less:
Now driv'n *ashore*, and at her feet it lies,
She knows too much in knowing whom she sees.
Her husband's corpse. *Dryden's Fables.*

[He] Then with his dire associates through the deep,
For spoil and slaughter guides the savage prow,
Him dogs will rend *ashore*.
Glover's Leonidas, book xii. p. 77.

Thus while their cordage stretch'd *ashore* may guide,
Our brave companions thro' the swelling tide;
This floating lumber shall sustain them o'er
The rocky shelves, in safety to the shore.
Falconer's Shipwreck.

ASHTAROTH, ASHTORETH; אשחריה, Heb. i. e. flocks, or riches; or ASTARTE, the chief goddess of the Sidonians and Phœnicians, called also the Queen of Heaven, and reckoned the same with the Juno of the Greeks and Romans. Cicero, however, calls her the Venus of Syria, wherein he is certainly justified by her mode of worship; which, like that of the Grecian Venus, abounded in all manner of debauchery. The Israelites, in all their relapses to idolatry, showed a great fondness for her worship. Solomon himself in his dotage sacrificed to her. She was represented in various habits, encircled with rays, &c. We find a place named after her in the days of Abraham; Gen. xiv. 5.

ASHTON (Charles), an antiquarian and one of the most learned critics of his age, was elected master of Jesus College, Cambridge, July 5th, 1701, and installed prebend of Ely, on the 14th. His skill in ecclesiastical antiquities was equalled by few.

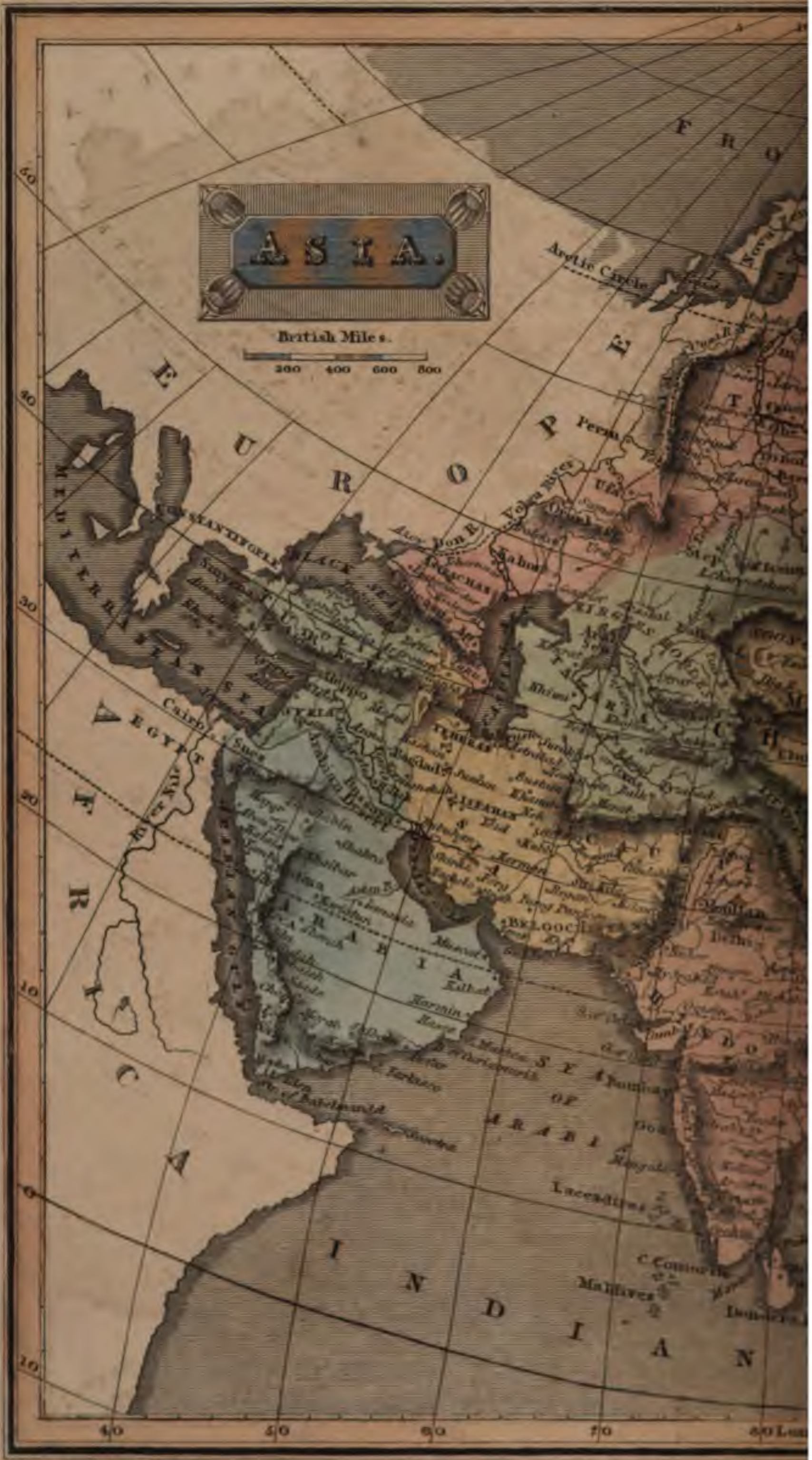
ASHTON (Dr. Thomas), a native of Eton, studied at Cambridge, in 1733, was successively rector of Aldingham, Starminster, and St. Botolph, Bishopsgate. In 1759 he took his degree of D. D.; and in May 1762 was elected preacher at Lincoln's Inn, which he resigned in 1764. He died in 1775, aged fifty-nine.

ASHTON-UNDER-LYNE, a town and parish in the hundred of Salford, county palatine of Lancaster, England, 186 miles N. W. of London. The town stands on the northern bank of the river Tame, consists of several narrow streets, many large factories, a parish church, chapel of ease, and other buildings for the happiness and convenience of a population of about 15,000 souls. The cotton and woollen manufactures are carried on here extensively, and the collieries in the vicinity augment and employ the population. Traffic is also much promoted by the transit of the Rochdale canal by this place. The benefice is a rectory in the diocese of Chester, the patronage belonging to the earl of Stamford, who is also lord of the manor. This place is one of the new boroughs enfranchised by the reform bill, and returns one member to parliament. The mayor is the returning officer. At the village of Fairfield in this parish is a Moravian settlement, in which the males are employed in spinning and weaving.

ASHUR, אשיר, Heb. i. e. blessed, the son of Shem, and progenitor of the Assyrians.

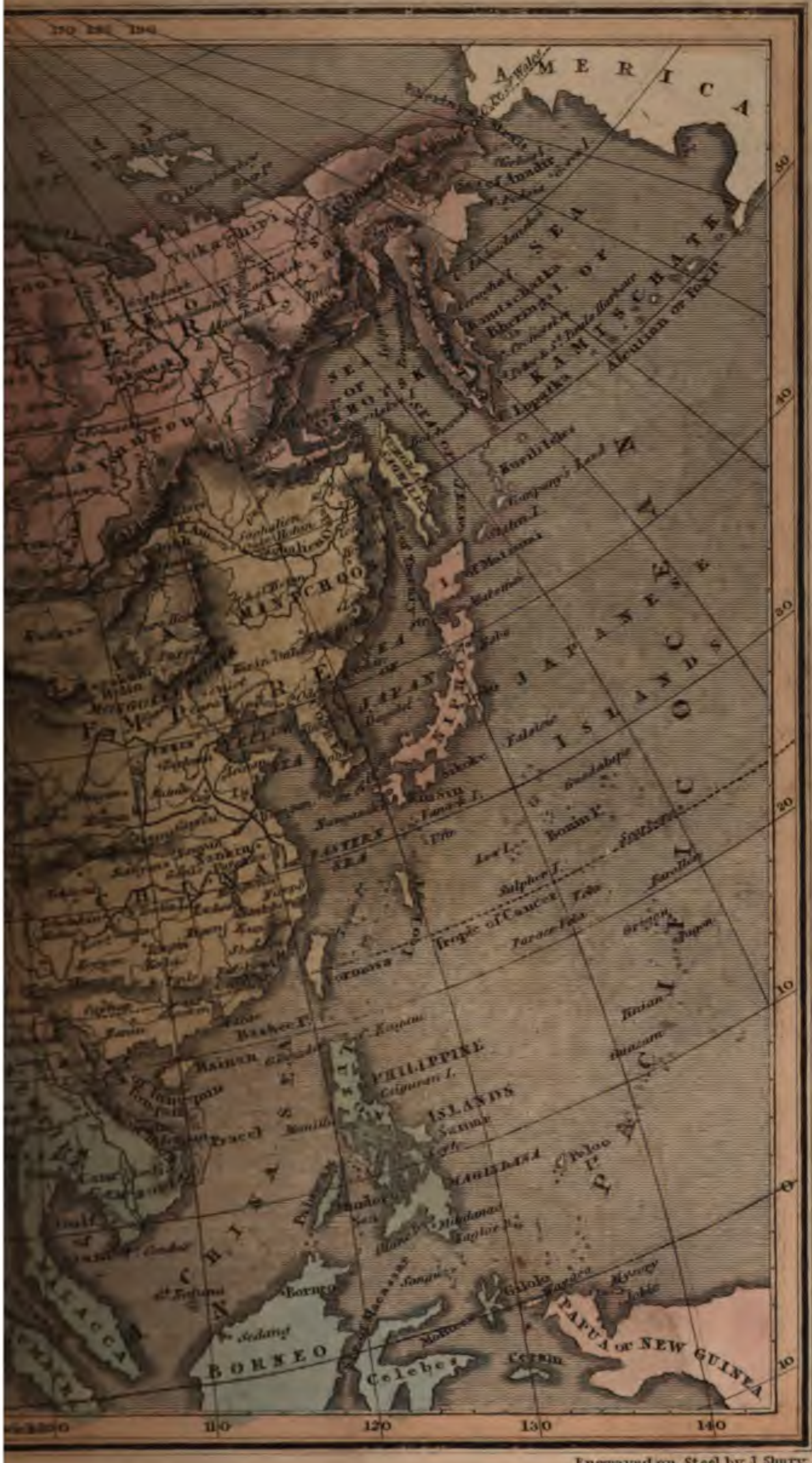
ASH-WEDNESDAY, the first day of Lent, so called from the ancient custom of sprinkling ashes on the head.

ASHWELL (George), rector of Hanwell, son of Robert Ashwell, of Harrow, was born at London in 1612, and admitted in Wadham College, Oxford, in 1627, where he took his degrees of A. M. and B. D., and was elected a fellow and tutor. He died at Hanwell, in 1693. He wrote, 1. A discourse, asserting the received authors and authority of the Apostle's Creed. Oxon. 1653. 2. A double Appendix, touching the Athanasian and Nicene Creeds. 3. On the Gesture at receiving the Sacrament, 1663. 4. A Treatise concerning Socinus, and the Socinian Heresy. 5. A Dissertation on the Church of Rome. Ox. 1618.



Drawn by J. Assheton.

London, Publis



Engraved on Steel by J Shury.

A S I A.

ASIA, in geography, one of the great divisions of the earth, lies to the east and south-east of Europe. North and south it stretches from about 2° to 77° of north latitude. East and west it extends from about 26° east, to 170° west longitude. Its northern capes penetrate the ice of the polar regions, while its southern promontories approach nearly to the centre of the torrid zone. Its greatest length in this direction is taken at something more than 5200 English miles from east to west. The extent of this continent from the western shores of Natolia, to East Cape, in Siberia, has been accurately calculated at 8000 miles.

BOUNDARIES.—It is bounded on the north and south by the Arctic and Indian Oceans; on the east by the Pacific Ocean and the Chinese Sea; and on the west by the Arabian gulf, the Isthmus of Suez, the Mediterranean, the Archipelago, the straits of Gallipoli, the sea of Marmora, the Bosphorus, and the Black Sea, whence to the Arctic Ocean the boundary which separates Asia from the east of Europe is not distinctly ascertained. It is, however, supposed to be constituted by the rivers Don and the Karposca, one of its tributary streams rising near Sarepta, the course of which is to be continued by an imaginary line between the 40°th and 50°th of east longitude.

ISLANDS.—The islands belonging to Asia are the Prince's Islands near Constantinople, Mitylene, Scio, Samos, Cos, Rhodes, Cyprus, &c. in the Archipelago. Bahrein on the Arabian side of the Persian gulf noted for its pearl fishery. The Laccadive, Maldive islands, and Ceylon in the Indian Ocean, contiguous to the peninsula of Hindostan East of the Bay of Bengal lies the Indian Archipelago, consisting of numerous different groups of islands including the Andaman and Nicobar islands, the Sunda isles, Sumatra, Java, and Borneo; the Moluccas or Spice islands, Papua or New Guinea, Solomon's isles, Queen Charlotte's isles, and the New Hebrides; which bending in a circular direction to the south-east lead us to the two islands of New Zealand. New Holland, to the south of New Guinea, is the largest island in the world, and contains an area larger than all Europe. East of the New Hebrides lie the South Sea islands. North of New Guinea are the New Carolinas and the Marianne or Ladrone islands. West of them are the Manillas or Philippine islands, and the Mindanas or Magindanas north of the Moluccas. Immediately above Luzon is the Isle of Formosa. East of Formosa in the Chinese sea lie the Lieû-Kieû, or Lùtchù islands. Still farther northward we have Nison and other islands which together form the kingdom of Japan; from which proceed the Kuriles, consisting of numerous groups of little islands, extending in a chain from the isles of Japan to Cape Lopatka, the southern extremity of Kamtschatka. West of these on the coast of Tartary lie Saghalien and other islands. A little distant from Kamtschatka are the Aleutian or Fox islands, proceeding in a curved line to the opposite extremity of America. Nova Zembla is also by some geographers considered as an Asiatic island, and lies to the north-west of Siberia. The islands of Ramisseram and Manar are curiously connected by a singular ridge of rocks called Adam's Bridge. It is nevertheless proper to observe that the best of later geographers, concurring in the opinion of the learned president des Brosses, have separated a vast number of the islands, formerly considered as Asiatic islands, from that continent, and arranged them with a number of other countries and islands to the south of Asia, and in the Pacific Ocean, under the two divisions of Australasia and Polynesia. The grounds of the new arrangement are explained with sufficient clearness by Mr. Pinkerton in his introductory observations on the Asiatic islands.

SEAS and WATERS.—Besides the great oceans which wash three sides of this celebrated quarter of the globe, there are numerous gulfs, bays, and inland seas which have greatly contributed to its fertility and civilisation. The Red sea or Arabian gulf, called the Weedy sea by the Hebrews, forms the grand natural division between Asia and Africa. Its length calculated from the straits of Babelmandel to the isthmus of Suez, is about 1470 English miles, and its medial breadth 140 miles. It terminates at the upper extremity, in two great branches, of which the western, by several miles the longer, is celebrated for the passage of the Israelites in the month Nisan, B. C. 1497, supposed to have taken place in about 29° 40′ north latitude. The eastern branch extends a little above the parallel of Mount Sinai. The Arabian sea is an appellation applied to the vast bay, included between Arabia and Hindostan, terminating in the Persian gulf, to which it is united by a strait twenty-four miles wide. This gulf stretches to the north-west between Arabia and Persia, containing several islands, and terminates under the same meridian as the Caspian. The deep and extensive Bay of Bengal, spreading from the eastern coast of Hindostan to the opposite shores of the Burman Empire, is separated from the last mentioned sea by the great promontory of the Deccan. This bay forms a magnificent inlet to the central part of southern Asia. At its entrance, which is in the eighth degree of latitude, it exceeds 1300 miles in width, and is 1000 miles from that parallel to its northern extremity, beyond the mouth of the Ganges. The gulf of Siam, on the opposite side of the peninsula of Malacca, separates the territorial projection from the broad rectangular peninsula included in the southern part of the Burman empire. The gulf of Tonquin lies on the south of China; the Yellow sea between China Proper and the gulf of Corea. The straits of Corea eastward lead to the sea of Japan; which stretches through about fifteen degrees of latitude, and divides the Japanese islands from the shores of the continent. This sea decreasing to the north terminates in a channel leading to the sea of Okotsk which forms a spacious inlet to the south-eastern shores of Siberia, dividing Chinese Tartary from the peninsula of Kamtschatka. From the top of this sea proiects a large forked gulf through nearly three degrees of latitude between two chains of magnificent mountains; one on the peninsula and the other on the continent. This gulf, and a bay on the opposite shore, render the conformation of the north-eastern part of Asia, peninsular. The sea of Anadir a few degrees south of Behring's strait forms another inlet to the north-eastern extremity of this continent. A few deep inlets are found on the shores of the Arctic Ocean. Passing from the White sea through the strait of Waygat, between Nova Zembla and the continent, we enter the gulf of Cara, which is divided from the deep gulf of Oby, by a long peninsula. This forms a large opening reaching nearly to the sixty-fifth parallel. The river Yenisei eastward forms itself into a wide estuary before it falls into the sea. The Bay of Taïnourskaïa, which from its situation is sometimes called the North Gulf, is placed about the seventy-fifth degree of latitude near the northern extremity of the Old World. Numerous other inlets are found along the coast from this point to Behring's strait. The Levant and the Archipelago lie on the western side of Asia, north of the Isthmus of Suez. The Euxine, or Black sea, forms the northern boundary of Anatolia, and is considered for the most part as a detached sea, being united to the Mediterranean only by a small strait, the Bosphorus of the ancients, so narrow as to be called the Canal of Constantinople.

The sea of Marmora, or Propontis, is considered by some an inland sea, and is connected with the Ægean Sea, or Mediterranean Archipelago, by a similar strait called the Dardanelles, or ancient Hellespont. This sea, as well as the Black Sea and Mediterranean, is supposed to have been anciently detached. The Caspian, celebrated for its fisheries, forms the separating boundary, which divides Russia from Persia and independent Tartary. It is of elliptical figure; the major axis extending nearly 700 miles from north to south, and occupying a breadth of nearly 200 geographical miles. It appears to have extended much farther north than it does at present; especially as the deserts in that direction are saline, and sandy, presenting the same kind of shells and marine productions as are found in the waters of the Caspian. Pliny and Strabo supposed this sea to be a gulf of the northern ocean; but it must always have been restricted by the western branch of the Uralian mountains, which passes to the north of Orenburg, reaching to the Volga. Its former union with the Lake Aral is highly probable from the marine deposits found in the intervening steppes, and from the Salt Lake still remaining between them; the midway eminence having been occasioned perhaps by the alluvion from the great rivers which flow into the latter. The Caspian is remarkable for its having no visible outlet for the discharge of its waters, notwithstanding the large rivers that flow into it, and also from the evidences of a former superior elevation being visible in the flanks of the mountains forming its western coasts. M. Pallas imagined he recognised its ancient shores on the steppe, considerably higher than its present level; and has given some particulars on the subject. M M. Engelhardt and Parrot, naturalists from Prussia, who visited this sea in 1815, place the former shores of the Caspian about 350 feet higher than its present surface; where they found gulfs and bays clearly defined. Its islands are mostly uninhabited; its bed is uneven, abounding with shoals, between some of which a line of 450 fathoms has been unsuccessfully employed to reach the bottom. Its waters are less salt than those of the ocean; but have a peculiar bitter taste. It has no tides; but is subject to violent storms. The striking peculiarity of this sea is the difference between its level and that of the Baltic and the Black Sea. From barometical observations made at Astracan, and at St. Petersburgh, during a period of nine years, the Caspian appeared to be 306 feet below that of the Baltic: and from other barometical observations, made between the mouth of the Kuban and that of the Terek, the surface of the Black Sea was found to be 105 metres, or 344.5 feet above the Caspian.

Lake Aral is about 200 miles in length, and seventy in breadth, and about an hundred miles distant from the eastern shores of the Caspian; which, in some respects, it may be said to resemble: it extends in the same direction, and receives the waters of several rivers, but discharges none. The principal rivers that run into it are the Gihon, or Jihon; the Oxus, of antiquity, which enters the southern extremity; the ancient Jaxartes, which reaches it from the east; as also the Aujany, or Kizil Daria. The southern extremity of this lake is sprinkled with numerous islands; and its supplies of water flowing from the south and the east, while those of the Caspian flow from the north and west, evince that they occupy part of the same natural basin. Baikal, another of the great lakes, or inland seas, of Asia, is situated near the southern borders of Siberia, on the northern side of the great chain of mountains which divides that country from Mongolia. This lake, like the former, stretches in the same direction as the Caspian: is 350 miles in length, and nearly forty in breadth. Its waters are fresh and pellucid, presenting however the general appearance of a slight green tinge, and are usually frozen from the beginning of December to the end of April. The depth of this lake varies from twenty to ninety fathoms; but so clear are the waters, that the bottom becomes distinctly visible to the depth of fifty feet. It is subject to violent storms, and is often agitated without any visible cause; whence it has received from the Russians the superstitious name of *Svetoie Marè*, *Holy Sea*. This lake, although it receives the waters of several copious rivers, has no visible outlet except the lower Angara, the discharge from which is considerably inferior to the accessions which it receives. It is almost surrounded by mountains, in which the existence of subterraneous fire is evident, from frequent shocks of earthquakes; and the surrounding shores are distinguished by some remarkable phenomena.

It has been imagined by many geographers that the northern regions of Asia communicate with the continent of America. This however is a topic on which we have not sufficient data to ground an opinion. Captain Cook certainly traced the separation of these continents, partially: The best information yet obtained on this particular is, that Behring's Strait divides them to about forty miles in breadth, having East Cape on the Asiatic side, and Prince of Wales Cape on the American. The depth of water is about thirty fathoms. Pursuing this strait northward, the Asiatic shore tends rapidly to the west, while the American proceeds nearly due north; till, at the distance of four or five degrees, the two continents are joined by one solid and impenetrable mass of ice.

Mountains.—The mountains of Asia have always been thought remarkable; and, arrayed in all the horrors of perpetual winter, seem to frown in awful silence over the profusion of the vale.

A celebrated writer (M. Walckenaer, in his Cosmologie, p. 105,) observes, 'that the chain of mountains in which the culminating points of the highest level are found, always follows the direction of the greatest dimensions of the continent; and the inferior chains or heights, where we find the culminating points of the second or third-rate levels, also follow the direction of the greatest dilatations of the land, terminating that continent.' In Asia we have an illustration of these observations. The greatest dimensions of the continent are from east to west: and the country from the seventieth to the 100th degree of east longitude, and from the thirtieth to the fiftieth of south latitude, presents nearly a level area, from the different sides of which all the largest rivers flow into the sea. The culminating points of this extensive level, there is reason to believe, are the most elevated spots on the surface of the earth. The included area has been termed the table-land of Asia; although, since the revival of science, it has been inaccessible to European travellers, and therefore little known. The western part of it is, however, mountainous; and the eastern is a vast desert; the Shamo of the Chinese, and the Kobi of the Tartars, exhibiting an extent of several thousand miles not watered by a single stream.

The Altaian mountains are the northern boundaries of this area; the Himálaya, on the south, divide it from Hindostan. On the east is that lofty range in which originates the great rivers of China; and the west is bordered by the mountains which contain the sources of the Indus and Jaxartes. The inferior chains, diverging as radii from this centre, are Múz-dágh or Múz-zárt, 'snowy mountains,' on the north. The Tibetian mountains on the east, the Vind'hya hills and Ghats on the south, and the Alburg or Alborg on the west. The different ranges that traverse the territories of Persia, and unite its north-west provinces to Caucasus on the north, to Taurus and Libanus on the west and south, are connected with the Alburgian chain. Libanus is also connected by the hilly country on the west of Jordan with the mountains of Arabia. The greater number of these inferior chains run from east to west, in the same direction as the central range. The extensive Altaï, or Khattaï chain, stretches across the continent, under different names, for more than 5000 miles, terminating, to the east, in Tchutskoi Ness and cape Lopatka. Of the highest points of this celebrated chain south of Russia, we have no accurate information; but the inferior ranges reach far above the point of perpetual congelation, and are supposed to be equal to the Alps. The Himálaya chain of mountains south of the great central level, rears its loftiest summits 26,000 feet above the level of the sea; and, according to some of our best geographers, upwards of 6000 feet above the celebrated Chimborazo of America, which towers over the entire Cordillera of the Andes. This southern chain is supposed to be of superior elevation to the northern. Mount Kaïlás, the Olympus of the Hindus, is supposed to exceed even the D'hólá-giri in Nipàl, which has been proved by admeasuremen to reach 26,400 feet above the level of the sea. Mount Caucasus, the next in point of altitude, is a vast range extending between the Euxine and Caspian seas. Mount Ararat rises south-west of the Caucasus; Libanus, Amanus, and Taurus, are all connected with this great chain; and the latter mount diverging with various branches, occupies almost the whole area from the Euphrates to the sea of Marmora. The Uralian mountains, running from south to north, nearly as far as Nova Zembla, and called by the Tartars the girdle of the earth, are much colder, in consequence of a higher latitude; but are inferior to the above in point of elevation.

Many volcanoes are in a constant state of activity throughout Asia; and many which were volcanic in former times, are now extinct, although smoke still issues, and hot streams are frequently discharged from crevices in their sides The insular regions of Asia are likewise mountainous, and Adam's Peak, in Ceylon, has been a remarkable subject of tradition and fable. Volcanoes are also found in most of the Asiatic islands; Gúnong-ápi is one of the most active now known; of that near Brambanan, in Java, a violent eruption is recorded in 1586. Ternate, the chief of the Moluccas, is nothing more than a volcanic cone, occasionally emitting flames from its summit; and on its sides are large pits of melting sulphur. The isles of France and Bourbon are entirely of volcanic origin; and the crater of the latter, while in a state of eruption, was visited by M. Bory de St. Vincent, who describes, with great interest, the phenomena observed on that occasion.

Rivers.—From the mountains of Asia numerous rivers descend, which serve greatly to refresh the surrounding country. The river Lena rises east of Siberia, near the lake Baikel, and flowing first north-east, then north, enters the Frozen Ocean, opposite the Borkhaya isles, after a course of 1900 miles. The river Enisei, rising in the Altaïan mountains, flows into the same sea after a course of at least 1400 miles. The Oby, perhaps the widest river in the Russian empire, rises about 51° north latitude, and 87° east longitude from the Altúrnor of the Kalmaks, and Ozero Teletzkoï of the Russians; and after a course of not less than 2000 miles, falls into the Obskaya Juba, or sea of Oby, within the arctic circle. The river Irtish takes its rise in 46° north latitude, and 92° east longitude, in the northern barrier of the central plateau; and after rolling its rapid stream as far as the 62d degree of latitude, and gathering numerous tributary waters in its course, falls into the river Obe, north of Samarou. The Amour, or Saghalià, which rises in the Kalcas country, is formed by the junction of the two rivers, Kherton and Argun; and after traversing Chinese Tartary, and receiving several large rivers in its course, disembogues itself in the sea of Okhotsk, near the northern extremity of the channel of Tartary, completing a course of 1800 miles. The rivers of China chiefly rise in the eastern declivity of the Table Land. The Mékäng, or Kambója, and the Irawadi, or Ava River, after descending from the plateau into the lower country by long and winding courses, flows in a direct line to the Indian Ocean. The three most celebrated rivers that spring from this region are the Indus, Ganges, and Burrampooter. The Ganges river is held sacred by the inhabitants, and is the only one of the three of whose source we have any satisfactory information; although Moorcroft tells us he found that of the Indus in 31° 3′ north latitude, and 80° 35′ east longitude. The two others rise in Thibet; the Burrampooter waters the eastern parts of Bengal; and the course of the Indus, to the south, has been known ever since the time of Alexander. The Oxus and the Jaxartes are two large streams, well known to the ancients, which rise from the western declivity of the central range; the former emanating from the glaciers of Pushti-khur, is supposed anciently to have taken a north-westerly course; at present it proceeds almost due north, and falls into the lake Aral. The latter rises in the Belúrdágh or Icy mountains, west of Afgháunistàun, and enters the eastern side of the same lake. The Tigris and Euphrates flow to the south, and the Araxes to the east, watering a considerable extent of country. The Jordan and Orontes fertilize and beautify the vales of Syria and Palestine. Anatolia, though it has neither broad nor rapid rivers, is refreshed by the division of innumerable smaller streams, which throw an enchanting appearance over the surface of the landscape. The Halys, or Kizil Irmà, arising from mount Taurus, after a course of 350 miles, falls into the Black Sea. But the Howang-hò, or Yellow River, which waters the northern provinces of China, is perhaps the deepest and most rapid river of Asia. This river rises on the eastern declivity of the plateau, and rolls its vast stream with unabated rapidity, to nearly 2000 miles. The Yang-tse-kiang, or son of the sea, is another noble stream of China.

CLIMATE.—The climate of Asia is exceedingly various, owing to the different degrees of elevation. In the south-east the heat is excessive, and in the northern parts the cold is almost insupportable. In Anatolia the central parts are colder than the provinces of France, although the latter are ten degrees farther north. The cause of this is explained by Mr. Brown, who calculates that the city of Erz-rùm is 7000 feet above the level of the sea. This extraordinary altitude of level, together with the great body of snow on the neighbouring mountains, accounts for the extremes of cold in Persia and Tartary; Arabia is considerably tempered, though within the tropics. China being mountainous has an agreeable climate; while in India and the Burman empire, are sensibly experienced the full effects of a torrid zone.

VEGETABLES.—The stupendous mountains, immense plains, immeasurable forests, noble rivers, and wide spreading marshes of this quarter of the earth, together with the variety of the soils, and an extreme difference of climate, from the intense cold of Siberia, where mercury freezes, to the almost insupportable heat of the sandy deserts: from the eternal frost that reigns around the pole, to the sterility of the arid waste, including diversified intermediate regions, always adorned with the blossoms of spring, enriched with the fullness of summer, or laden with the productions of autumn, produce an unparalleled variety of vegetation, from the almost imperceptible moss that creeps along the Arctic shores to the hundred-stemmed banian that spreads its beautiful luxuriance beneath a tropical clime. Some parts of Asia are very sterile, and the inhabitants look for support to the surrounding sea, in which fishes and mollusca abound. Vegetable productions however, generally speaking, are numerous, and differ according to the climate under equal circumstances of soil and irrigation. The central and western parts produce all sorts of grain which are common in Europe, and culinary vegetables in the highest perfection. The tropical and southern regions afford gums, spices, medicinal roots, and extracts unknown in colder climates. Several genera of plants are peculiar to New Holland and the adjacent islands. The tea-tree is found chiefly in the central regions; and the bread fruit and bamboo, which are natives of Asia, are useful in every part of domestic economy.

MINERALS.—This division of the globe contains the precious metals in great abundance: gold is washed down the rivers of Asia Minor. Arabia still supplies it in its utmost purity; and in Assam, Celebes, and Borneo, the gold is said to be native. Mount Sipylus has been celebrated for the production of silver, and the mines of Tokat supply both silver and copper. Great quantities of tin are found in the island of Banca; lead and iron in various parts of the continent; precious stones are found in great variety throughout the whole of Asia; fine diamonds in Golconda; rubies in Ceylon, topazes in Siberia; and the most beautiful pearls in the straits of Manaar and the Bahrein islands; the corundeum and other valuable stones are peculiar to these countries. Singular remains of antiquity are also dug out of the earth; huge tusks of a species of animal now unknown, and even the entire animal itself, is found in the islands of the Frozen Ocean.

ANIMALS.—Asia contains a great variety of land and marine animals, from the minute insect that flutters in the solar beam, to the stupendous elephant, the ferocious tiger and the majestic lion. The most valuable are indigenous to this quarter of the globe. The horse is found on the northern confines of Persia in his native state, but exhibits none of the symmetry, powers, or proportions, to which he arrives through a course of domestic training. The camel is found here in his most perfect growth, and performs journeys which to the horse would be fatal. The elephant is trained to all sorts of service. The sea-otter, so valuable for his fur, and the whale are common, and supply a considerable source of wealth to the inhabitants.

'The population of Asia,' it has been observed, 'by no means equals those expectations which its history would naturally inspire,' owing to the ravages of war, and the influence of despotic governments, which always impose an effectual check upon the increase of population. Nevertheless, where the governments are mild and beneficial, as in British India, the reverse is the fact. China in particular, owing to a long freedom from foreign and domestic war, is said to exhibit the amazing population of five hundred millions; and even this, according to some geographers, is below the real amount.

Asia, however, being the scene of human origination, is still peopled by numerous indigenous tribes, and presents an ample field for the study of man, in all the stages of his progress from barbarism to civilisation. The variety observed in the appearance of the natives is probably the effect of difference of climate, aliment, and religion. The Samoied tribes, New Hollanders, and inhabitants of Andaman, are of diminutive size. The people of Jesso and the Kurile islands, have uncommonly large beards, and an unnatural profusion of hair all over their bodies. The Tartars and Chinese are known by the peculiar figure of their faces; the latter particularly by their oblique contracted eyes. There is, however, reason to believe they were anciently derived from one common origin, and bore a great resemblance to each other.

HISTORY.—Noah is said to have settled in Asia, immediately after the deluge, near the borders of the Euphrates, and to have peopled the whole continent. The posterity of Shem occupying the central regions; Japhet the northern; and Ham the southern. Javan and his descendants, Ashkenaz, Dodanim, Tarshish, Elisha, Togarmah, and Riphath, are supposed to have been the ancient inhabitants of Asia Minor. The Canaanites and Amalekites were the people of Syria and Arabia Petræa. Modern writers have referred the present natives of Asia to those different stocks the Hebrews, Indians, and Tartars, the propriety of which will appear from their make, features, and languages. There are, however, some large tribes, as the Malays and aboriginal negroes, which cannot be referred to either of these classes, as also the mountaineers of Caucasus, and the inhabitants of northern Siberia. Mr. Pinkerton observes, that the population of Asia is allowed by all authors to be wholly primitive and original; with the exception of the Tshuktshis, whom the Russian historians suppose to have passed from the opposite coast of America, the colonies that have migrated from Russia to the northern parts as far as the sea of Kamtschatka, the well-known European settlements, and a few others. Asia certainly presents an amazing original population. We add the following table of the nations and languages in Asia, as calculated to give the reader a tolerably accurate idea of this interesting subject of enquiry.

Table of the Nations and Languages in Asia.

1. Assyrians.—Assyrians, Arabians, Egyptians.—Chaldee, Hebrew, &c.

2. Scythians.—Persians, Scythians intra et extra Imaum, &c. Armenians.—(The Parsi and Zend are cognate with the Gothic, Greek, Latin, according to Sir William Jones. Indian Dissert. vol. i. p. 206. The Pehlavi is Assyrian or Chaldaic. Id. 187, 188. 206.)

3. Sarmats.—Medes and Parthians.—Georgians and Circassians.

4. Seres and Indi.—Hindoos, northern et southern, &c.

5. Sinæ.—Chinese and Japanese.—These have a Tartaric form and face; they are probably highly-civilised Tartars, Mongoles, or Mandshurs.

Barbaric Nations from north to south, and according to the degrees of barbarism.

6. Samoyedes, Ostiaks, Yurals, &c.

7. Yakutes.—Yukagirs. (Expelled Tartars, according to Tooke and Lesseps.)

8. Koriaks.—Tshuktshis. (From the opposite coast of America. Tooke's Russia. The Yukagirs are a tribe of the Yakutes, around Yakutsk, and both are expelled Tartars. Tooke's View, ii. 80. Lesseps, ii. 312.)

9. Kamtskatdales.—Kurillans.—(These resemble the Japanese.)

10. Mandshures or Tunguses.—Lamutes.—(Ruling people in China.)

11. Mongoles.—Talmuks.—Soongares, Tungutes, Buræts, &c.

12. Tartars or Huns.—Turks, Khasares, Uzes, and Siberians.—Nogays, Bashkirs, Kirghisikaizaki or Kirghise Kaizaks, Teleutes.

After the destruction of Attila's swarms, and the effects of unfortunate inroads, the Huns became subject to the Mongoles, who under Zingis, or Chingis khan, Timur, &c. consituted the supreme nation in Asia.

The great share of population which Europe has received from Asia will appear from the following brief statement.

Primitive Inhabitants.

1. Celts.—Irish, Welsh, Armorican.—Erse, Manks, Cornish.

2. Fins (chief god Yummala).—Finlanders, Esthonians, Laplanders, Hungarians, Permians or Biarmians, Livonians, Votiaks and Cheremisses, Vogules and Ostiaks.

Colonies from Asia.

3. Scythians or Goths (Odin).—Icelanders, Norwegians, Swedes, Danes, Germans, English.—Swiss, Frisic, Flemish, Dutch.

4. Sarmats or Slavons (Perune).—Poles, Russians, Kaizaks.—Heruli, Vendi, Lettes.

The inhabitants of France, Italy, and Spain, are also of Asiatic origin; and speak corrupted Roman, which, like the Greek, is a polished dialect of the Gothic, according to Sir William Jones, and other able antiquaries. The Heruli

Vendes, and Lettes, used mixed and imperfect dialects of the Sclavonic.

Besides these numerous original nations, the Malays and Asiatic islanders constitute another large and distinct class of mankind, with a peculiar speech, in the south of the extensive continent of Asia.

GOVERNMENTS.—The people of Asia in their civil state consist of families occupying the same territory, but acknowledging no chief or governor; of independent tribes associated under one common potentate as the Arabs and Tartars, and therefore called equestrian nations; or of kingdoms ranged under established monarchies, of which the chief are Independent Tartary, China, Thibet, with its subsidiary provinces, the Japanese empire, &c. The Asiatic governments are mostly despotic, and those established by Europeans are nearly of the same description. In some of the political institutions of Asia there is, however, the rude image of a popular administration; in others the influence of women is admitted; whilst in some few the prince is guided in all public measures by the advice of his nobles. Were the principal governments in Asia to be arranged according to their natural and political importance, they would probably succeed each other in the following order: China in the first place, and after this successively Persia, Turkey, and Russia; the precedency of the numerous other states can hardly be ascertained.

RELIGION.—The most common religion of Asia is idolatry. The doctrines of Mahomet prevail to a great extent; but their influence is upon the decline, owing in a great measure to the popularity of the Wahabees. Christianity is now generally rejected in Asia, and in many countries even where it was formerly tolerated, as in China and Japan. The sacrifice of animals, and even of human victims, is very frequent; and a spirit of the most degrading superstition seems to reign throughout the vast regions of this division of the globe. Penance is carried beyond even the bounds of probability. Imposing upon himself perpetual silence, gazing on the sun till his eyes become fixed in their sockets, lacerating his body with sharp weapons, and other practices still more shocking to humanity are, through vast regions, considered among the most acceptable services which a man can offer to the deity. Polygamy is generally practised, and sometimes even a plurality of husbands are allowed to a single woman: females of rank also, betrothed at an early age, cohabit not with their husbands but with other men without reproach. Infanticide is common; and burning the living wife with the body of her dead husband, though now rendered a voluntary act on the part of the woman, has by no means subsided. Many of the tribes are complete cannibals, and others are little better.

CHARACTER OF INHABITANTS.—The inhabitants of Asia, violent in their dispositions, are generally ferocious, vindictive, and cruel. The tender ties of nature are little felt. Children are openly sold by their parents without even the apology of necessity. Wives are sacrificed by their husbands even on the bare suspicion of infidelity; and in the most civilised state after an unfortunate contest for the crown, the unsuccessful prince, if not executed, invariably has his eyes put out, though the rival should be his own brother.

The ancient geography of Asia cannot be contemplated without feelings of excitement, which the deep gloom of her present degraded and idolatrous condition are unable to suppress; feelings unknown in the contemplation of any other portion of the globe. Asia was the parent of nations, the cradle of civilisation and science—here occurred most of those remarkable transactions recorded in the scripture history—here arose successively the Babylonian, Assyrian, and Persian empires—and here the Christian religion was first planted for the salvation of man. Much of the celebrity of this quarter of the globe is undoubtedly owing to its climate, and the numerous gulfs, bays, and navigable rivers with which it abounds opening early facilities for commerce, &c.; but still more perhaps is to be attributed to the native genius and sanguine temperament of its inhabitants.

The origin of the name of Asia has given rise to some curious speculations and disquisitions. The Greeks deduced it from Asia, the fabulous daughter of Oceanus and Thetis. Others have derived it from Asius, king of Lydia. Bochart traces it to the Hebrew or Phœnician word Asi, signifying middle, which is, however, unsupported by historical evidence. According to Homer, Herodotus and Euripides, it early designated a country of Lydia, where ancient geography mentions a tribe of Asiones and a city of Asia. The name, however, was gradually extended by the Greeks from a single province to the whole of Asia Minor, and afterwards to other regions as they were discovered successively; in the same manner as Allemagne is applied by the French to the whole of Germany; and as Italia, an ancient canton in Calabria, is now denominated the peninsula of Italy. Since, however, much perplexity has arisen among authors by the diverse acceptations of the term Asia, so as to render it extremely difficult for their readers to know what region was distinctly understood by that appellation; and since it is not easy to reconcile the apparent inconsistency between sacred and profane history, as to the provinces which it comprised, we present the following observations for the satisfaction of the reader:—The ancient geographers divided the vast continent that was known to the Greeks and Romans under the word Asia, first into Greater and Lesser Asia. The latter, also called Asia Minor, was thought to be a peninsula terminated by a line drawn from Sinope to the line of separation between highland and lowland Cilicia (Aspera and Campestris). It comprehended a great number of provinces; but that which included Phrygia, Mysia, Caria, and Lydia, was denominated Asia Proper, or Asia properly so called. Cicero, enumerating the regions contained in Asia Proper, makes no mention of Æolis or Iolia, though undoubtedly a district of it, as being comprehended partly in Lydia and partly in Mysia. Lydia, beside the inland country commonly known by that name, contained also Ionia, lying on the sea-side, between the rivers Hermus and

er; and Æolis, extending from Hermus
river Caicus, or to the promontory Lec-
e ancient boundary between Troas and
coast of the Greater Mysia. Accordingly,
roper comprehended Phrygia, Mysia, Ly-
ria, Æolia, and Ionia. This tract was
d, according to Ptolemy, on the north by
ia and Pontus, extending from Galatia to
itis; on the east by Galatia, Pamphylia,
cia; on the south by part of Lycia and
odian sea; on the west by the Hellespont,
Ægean, Scarian, and Myrtoan seas, occu-
the space between the thirty-fifth and
rst degree of north latitude, and extending
5° to 62° of longitude.

sia Proper is but a part of Asia Minor,
Lydian Asia is only a part of Asia Proper.
n this acceptation, comprehends Lydia,
and Ionia; and is that Asia whereof men-
made in the Acts and the Apocalypse.
le tells us that Smyrna was at first pos-
by the Lydians; and Scylax Coryandensis
it among the cities of Lydia, as also
s, Sardis, Philadelphia, and Thyatira, are
d by Ptolemy among the cities of Lydia,
aodicea by Stephanus. Steph. de Urbid.
ancient times Lydia was called Mæonia,
e Lydians, Mæonians, is manifest from
tus, Diodorus Siculus, Dionysius Afer,
Pliny, Stephanus, and others; and that
t was called Asia is no less plain from
us, who flourished before Archilochus,
emetrius Scepsius, contemporary with
and Aristarchus the grammarian, from
les, Suidas the great etymologist, &c.;
which it is expressly affirmed by the
scholiast of Apollonius Rhodius, that
was formerly called Asia, and hence Lydia
n said to have a better claim to the name
than any other part of that continent.
r (or Greater) Asia comprehended the
ing part of that continent. Its great di-
were Iberia, Colchis, and Albania, be-
he Euxine and Caspian seas; Mingrelia,
a, and Dághistàn Armenia, which retains
ient name. Media and Persia included
ern Persia. Bactriana and Margiana; the
Balkh, and Bokhàra of the Turks and
; Syria, Mesopotamia and Assyria, the
'sh ishâm, Dìyar bekr, and Abjonirah of
oderns. Hyrcania, Persia, and Susiana,
ak and Fárs of the present day. Judea,
nia, and Chaldea; the southern part of
and Pachalic of Bagdàd. India the
y between the Indus and Ganges, and
he remoter regions to the north-east.

ENT GEOGRAPHY.—The earliest accounts
vast portion of the globe are those con-
n the Scripture, which are, however, ex-
y imperfect. Moses has enumerated the
nt parts of the earth with which the He-
were familiar; but, in consequence of the
by which he designates the places differ-
m other authors, great obscurity hangs
he whole of his geography, except that
relates to the land of Canaan itself, and
tes immediately contiguous. He appears
e been well acquainted with Asia Minor,
ia, Media, Persia, and Arabia. The Gog and Magog of Scripture seem to have been the inhabitants of Caucasus. Riphath seems to refer to the Riphæan mountains; and Rosh refers to the ancient Rossi, from whom were descended the Russians of the present day. The more northerly parts of Asia were evidently unknown to the Greeks. Herodotus considered the Phasis in Colchis as the line of separation between Europe and Asia, whilst others believed the Don, or Tanais, as the proper limit. The mountains north of India were the utmost boundary of their knowledge with respect to that part of Asia. The Ganges and the Indian Ocean they considered the eastern and southern limits; and the Red Sea, with the isthmus between it and the Mediterranean, brought them back to the western or nearest side. Many geographers included Egypt in Asia, making the Catabathnus, or western side of the valley of the Nile, the separation between Asia and Africa; whilst others considered the Nile itself as the line of separation. Strabo and Pliny supposed the northern end of the Caspian sea communicated with the ocean.

PROGRESSIVE GEOGRAPHY.—At the time when Asia was first mentioned in history it probably contained more powerful empires than it does at present, the Chinese excepted. Alexander the Great carried his arms beyond the Indus. The Sinæ, or eastern Indians, were known to Ptolemy in the second century, and also Taprobane or Ceylon, with Jabadia, the Javia dwipa of the Indians, and the Java of our maps. Alfred, king of England, deputed a mission to the shrine of St. Thomas on the coast of Babelmandel; and the crusades of Syria and Palestine, in the eleventh and twelfth centuries, led to an intimate acquaintance with that part of Asia. Shortly after the passion for crusades had subsided, a spirit of commercial enterprise was excited, and merchants, from several parts of Europe, penetrated into the interior. The monks, animated with a desire to convert the heretics, departed in great numbers for Asia; a mission deputed from the pope to the court of the Moguls, and another from Louis of France to the same princes contributed on their return, by the publication of their travels, to enlarge the ideas of Europeans with respect to that part of the world. Marco Polo, a Venetian merchant, with his companions, spent twenty-six years in travelling either as merchants, or as agents of the Great Khan of the Tartars, during which period they for the first time disclosed the great desert of Cobi, and made great additions to our knowledge of oriental geography, particularly in the north of Asia. Such indeed was the ignorance of the age in which he lived, that his descriptions of the magnificence and wealth of the Asiatics were regarded by his contemporaries as the effusions of romance. Subsequent information has nevertheless raised him to distinguished credit, and his work is now considered one of the most curious monuments we possess of the state of Europe and Asia in the middle ages. In the fifteenth century improvements in navigation, and the spirit of commercial enterprise, facilitated the progress of discovery. A passage was discovered to India round the Cape of Good Hope, and the

English, Dutch, Spanish, and Portuguese settled several establishments on the Asiatic coast, from which they undertook still more distant expeditions into the interior, and opened an intercourse with China, Japan, and Hindostan. The British government sent out repeated expeditions under the conduct of Cook, Byron, and others, to make discoveries in the Southern Ocean; and the empress Catharine about the same time directed scientific travellers to explore some of the central parts of her Asiatic dominions. Geography by these means received many splendid additions, and our knowledge of different and distant parts of the globe illustrated many important and interesting points in the physical and natural history of southern Asia. Van Diemen's Land and New Holland were explored by captain Flinders. The same voyager also observed that there is no river deeply penetrating into the latter island; and that the gulf of Carpentaria is a basin of vast extent studded with islands. The expulsion of the Dutch from their insular settlements has also led to an intimate acquaintance with those territories, all knowledge of which they endeavoured to conceal. Travellers from British India have greatly increased our information with respect to the neighbouring regions. A mission to the court of Persia has thrown a light on the geography and policy of that distinguished empire, and shown how defective our information was with regard to Oriental nations. A field of discovery, however, yet remains to complete the geography of this part of the world. The origin, course, and progressive increase of some of its greatest rivers are unknown; scarce any of its internal seas, except the Caspian, have been the subjects of actual survey; and its mountains, perhaps the most stupendous masses on the globe, present a wholly unexplored field of enquiry. Siberia is but little known; and even of the coasts no perfect survey has ever been taken. The whole extent of country from the Caspian to the sea of Okhosts, including a superficial area of many thousands of miles, is occupied by nations and people whose names are scarcely known. Little more than the borders of Arabia is known to Europeans. The interior regions of Tartary and the northern part of China require much illustration. The same remark may be applied to India and the interior of Asia generally. With regard to the probable population of this continent so defective is our knowledge that differences of between one and two hundred millions exist in regard to that of China alone. Our knowledge of the islands is almost equally imperfect. Not a tenth part of New Holland has been attempted, and that only in a single line, although every journey unfolds novelties and wonders in nature which seem to distinguish this extensive island from every other region in the world. Borneo, Sumatra, Celebes, and Papua greatly demand the attention of travellers. The north-eastern angle of territorial Asia has been repeatedly visited by navigators and travellers since the civilization of Russia by the genius of Peter the Great; but the geography and natural history of that region have been hitherto described in a manner which is exceedingly imperfect. On the whole we are looking for superior lights. The morning which dawned so many centuries ago has hitherto advanced but slowly; and we hail the approach of a brighter period, which is not very remote, when the sun of discovery shall burst the clouds in which he has been enveloped, and irradiate the geography of this interesting section of the globe.

The propagation of Mahommedanism, and the exterminating wars by which it was attended, effected a complete revolution by the states of this continent. The Greek empire sunk in the arms of the victorious Moslems. The caliphs for a time prevailed to a considerable degree over their Constantinopolitan predecessors, and were in their turn humbled by the Tatarian Jengeiz and Témùr. The latter were finally absorbed in the overwhelming power of the Turks who now, having no formidable enemy to oppose, overran the west of Asia, and in the middle of the fifteenth century extinguished the Eastern Empire, and laid the foundations of those great divisions of this continent which subsist at the present day.

With respect to the modern divisions of Asia, we observe that the Russian empire extends from the Uralian mountains to the sea of Kamschatka, and from the Arctic Ocean to the parallel of fifty degrees north latitude. It is inhabited by Tartars, Mongols, Mantchirs, &c., under the general name of Siberia. The Asiatic part of the Ottoman Empire, consisting of Anatolia, Syria, and Diyar-Bekr, the ancient Mesopotamia, lies between the Black Sea and the Mediterranean; the canal of Constantinople and the Tigris; Arabia lies to the south of the latter country; and Persia lies east of the Tigris, as far as the Indus, between the Caspian Sea and the Persian Gulf. East of the Caspian, as far as east longitude 100 degrees, between Russia and Persia, are the independent Tartars. From the above meridian, to the Sea of Japan, lies eastern or Chinese Tartary, inhabited by the Mantchirs who subdued China in the middle of the seventeenth century, and whose original country forms at present the northern part of that empire. Thibet is on the north side of the Himàlaya mountains, the Alps of Hindostan. South and east of China lies the peninsula of India, beyond the Ganges. West of the Burman empire is India on this side the Ganges, comprehending Kashmir, Hindostan, and the Deccan. The islands are under various governments, and have been made the seat of various commercial establishments by the different powers of Europe, of which an account will be given under their names separately.

Asia Minor is the western portion of Asia, having the Black Sea on the north, the Euphrates on the east, and the seas Mediterranean and Marmora, with the Hellespont and Bosphorus, on the west. It is of an irregularly oblong figure, 1000 miles from east to west, and 400 or 500 from north to south, variously indented by bays and inlets, and having a few peninsulas and promontories. Its streams and rivers are numerous but not large; the interio abounding with saline lakes, crystal fountains and hot-springs, whose waters have been cele rated for their medicinal qualities. The climate is fine, and its valleys warm, washed in some places by mountain torrents, shaded by the mountains, and tempered by cool and refreshing breezes from the sea. Long ranges of hills, from which branches diverge in all directions, isolated rocks and mountains crowned with trees and verdure, delightfully change the prospect; while the luxuriance of the soil and abundance of grain, fruits, and every species of vegetation, render subsistence comfortable and happy. Earthquakes are, however, frequent, overwhelming entire cities and their inhabitants; and the plague sweeps away its thousands. The whole country is subject to the Turkish government, and inhabited chiefly by Mahommedans and Christians. It is divided into several large provinces, of which Natolia and Caramania are the most important. It contains the cities of Angora, Bursa, Smyrna, and Tocat besides the ruins of many others which have been highly celebrated in history. The southern shore of Caramania is overspread with remains of Grecian antiquities; and Natolia abounds with ancient curiosities and columns, having been the theatre of important events from the earliest history. The several islands in the Archipelago, belonging to this country, are also highly classical and important.

This part of Asia is the most interesting region of the earth, the parent of education, arts, and arms—the cradle of mythology, poetry, and eloquence—the favorite abode of the muses—the soil in which lay the ancient roots of genius, which have since struck round the world, beautified the moral wastes, and still luxuriantly expand their blossoms in almost every clime of the civilised globe.

ASIAGO, one of the seven Venetian communes in Upper Italy, in the midst of mountains, in the north of the circle of Vicenza, and now belonging to Austria. The inhabitants are descendants of the ancient Germans, and lead a purely pastoral life. They enjoyed great privileges under the Venetian government, and have more than once defended the passes of their country against the inroads of a foreign foe. The large town of Asiago is the seat of the court of justice for all the communes; has a castle, and 11,000 inhabitants. It is twenty miles north of Verona.

ASIDE. On side. See Side.

And he took him *asidis* frō the people and puttede his fyngris into hise eeris and he spette and touchide his tunge. *Wyclif. Mark* ch. vii.

Fran. Sir, he may live.
I saw him beat the surges under him,
And ride upon their backs; he trod the water,
Whose enmity he flung *aside*, and breasted
The surge most swoln that met him; his bold head
'Bove the contentious waves he kept, and oar'd
Himself with his good arms in lusty strokes
To the shore; that o'er his wave-worn basis bowed.
Shakspeare's Tempest.

Thus (she pursu'd) I discipline a son,
Whose uncheck'd fury to revenge would run;
He champs the bit, impatient of his loss,
And starts *aside*, and flounders at the cross.
Dryden's Hind and Panther.

It is the custom of the Mahometans, if they see any printed or written paper upon the ground, to take it up and lay it *aside* carefully, as not knowing but it may contain some piece of the Alcoran. *Addison.*

ASILUS, in entomology, the hornet-fly, a genus of insects belonging to the order of insecta diptera. It has two wings; and a horny, bent, two-valved, beak. There are seventeen species of this insect. Many of them wound in a very painful manner, and are particularly troublesome to cattle in low meadows; others of them are quite harmless.

Asilus, in ornithology, the name used by many for the luteola, or regulus non cristatus, an extremely small bird, common among willows.

ASINARII, an appellation given, by way of reproach, to the ancient Christians, as well as Jews, from a mistaken opinion, among heathens, that they worshipped an ass.

ASINESIA, in medicine, an immovableness of the body, or in any part of it, as in apoplexy, palsy, &c.

ASINIUS Lapis, a name given by some writers of the middle ages, to a stone, said to be found in those places frequented by the wild ass. See Bezoar.

ASINUS Piscis, in ichthyology, a name given by some to the eglefinus, or common haddock, called also onos.

ASIO, in ornithology, a name given by Aldrovandus and others, to the otus, or lesser horn owl.

ASISIA, or Assisia, a town of Liburnia, now in ruins, but exhibiting many monuments of antiquity. It is the Asseria or Assesia of Pliny, and is now called Podgraje. See Asseria.

ASISIO, or Asitio, a city of the Pope's territories in Italy, situated about sixteen miles east of Perugia, and eighty north of Rome. It is seated on a mountain, and is said to have been the birth-place of St. Francis.

ASK, } Ang.-Sax. secan, ascecan, to seek,
Ask'er. } to ask; ascean, to seek, to ask. To seek, enquire, demand, require, petition, beg.

As it is a great point of art, when our matter requires it, to enlarge and veer out all sail; so to take it in and contract it, is no less praise, when the argument doth *ask* it. *Ben Jonson.*

A lump of ore, in the bottom of a mine, will be stirred by two men's strength; which, if you bring it to the top of the earth, will *ask* six men to stir it. *Bacon.*

When thou dost *ask* me blessing, I'll kneel down,
And *ask* of thee forgiveness. *Shakspeare.*
We have nothing else to *ask*; but that,
Which you deny already: yet will *ask*;
That, if we fail in our request, the blame
May hang upon your hardness. *Id.*

In long journeys, *ask* your master leave to give ale to the horses *Swift.*

Let him pursue the promis'd Latian shore,
A short delay is all I *ask* him now;
A pause of grief, an interval of woe. *Dryden.*

Ask of the learn'd the way; the learn'd are blind;
This bids to serve, and that to shun mankind;
Some place the bliss in action, some in ease,
Those call it pleasure, and contentment these.
Pope. Essay on Man.

Upon my *asking* her who it was, she told me it was a very grave elderly gentleman, but that she did not know his name. *Addison.*

ASKAH, a town of Hindostan, in the northern circar, Cicacole, thirty-six miles north by west of Ganjam.. It stands in N. lat. 19° 44′, E. long. 84° 55′.

ASKANCE′, Askaunce′, Askaunt′, Asquint′. Supposed to be from *aschined*, participle of the Dutch verb *schuinen*, to cut awry. From whence probably are squint and asquint; sideways, oblique.

And wrote alway the names, as he stood,
Of alle folk that gave hem any good,
Askaunce that he wolde for hem preye.
Chaucer. The Sempnour's Tale.

Some say, he bid his angels turn *askance*
The poles of earth, twice ten degrees and more,
From the sun's axle: they with labour push'd
Oblique the centric globe. *Milton.*

Zelmane, keeping a countenance *askance*, as she understood him not, told him, it became her evil. *Sidney.*

His wannish eyes upon them bent *askance*;
And when he saw their labours well succeed,
He wept for rage, and threaten'd dire mischance.
Fairfax.

While thus their worke went on with lucky speed,
And reared rammes their horned fronts aduance,
The ancient foe to man, and mortall seed,
His wannish eyes vpon them bent *askance*.
Fairfax's Tasso, book iv.

At this Achilles roll'd his furious eyes,
Fix'd on the king *askaunt*; and thus replies,
O, impudent—— *Dryden.*

Since the space, that lies on either side
The solar orb, is without limits wide;
Grant, that the sun had happened to prefer
A seat *askaunt*, but one diameter:
Lost to the light by that unhappy place,
This globe had lain a frozen loansome mass.
Blackmore.

Through his bright disk the stormy weapon flew,
Transpierc'd his twisted mail, and from his side
Drove all the skin, but to his nobler parts
Found entrance none by Pallas turn'd *askance*.
Cowper's Iliad, book xi. p. 195.

————————Panic-fixed he stood,
His seven-fold shield behind his shoulder cast,
And hemm'd by numbers with his eyes *askant*,
Watchful retreated. *Id.* book xi.

ASKERON, a place five miles from Doncaster, noted for a medicinal spring. It is a strong sulphureous water, slightly impregnated with a purging salt. It is recommended internally and externally in strumous and other ulcers, scabs, leprosy, and similar complaints. It is good in chronic obstructions, in cases of worms, &c.

ASKEW′. Dan. *skiævt*, crooked; from *skiæver*, to twist.

For, when ye mildly look with lovely hue,
Then is my soul with life and love inspir'd:
But, when ye lowre, or look on me *askew*,
Then do I die. *Spenser.*

Then take it, Sir, as it was writ;
Nor look *askew*, at what it saith:
There's no petition in it. *Prior.*

This said, her spear she push'd again
And, mounting from it with an active b
Flew off to heaven: the hag with eyes
Look'd up, and mutter'd curses as she f
Addison. Ovid's

Askew (Anne), an English
daughter of Sir William Askew, o
Lincolnshire. She was born at
seat about 1520; and received a li
tion. Early in life she was marrie
Kyme, contrary to her own inclin
being harshly treated by her husban
to the court of Henry VIII. to sue
ration. Here she attracted the part
of such ladies as were attached to
tion: on this account she was ar
acknowledging her religious princip
prisoner to Newgate. After having
the rack with savage cruelty in the
was burnt in Smithfield, along wit
and two other persons of the same fa
Her letters in Fox and Strype show
been an accomplished and pious wo

ASKEYTON, a market town
seated on the river Deel, 110 miles
lin; noted for its castle, built by
Desmond, and for its beautiful abbe

ASLA′KE. Ang.-Sax. aslacian,
to resolve, to unbend, to reduce to
nent parts, to slake, or slacken.

But this continual, cruel, civil
No skill can stint, nor reason can

Whilst, seeking to *aslake* thy ragin
Thou in me kindlest much more great
But suche as of ther golde ther only
Noe treasure may the rauyn of their
aslake.

ASLAN, or Aslani, in commer
given to the Dutch dollar in most
Levant. The word is also writte
asselani. It is originally Turkish,
a lion, which is the figure stamped
Arabs, taking the figure of a lio
called it abusketh. It is silver, b
loyed, and is current for 115 or 120
Asper.

ASLAN′T. On slant. See Sla
There is a willow grows *aslant* a br
That shews his hoar leaves in the glas
Shakspe

He fell; the shaft
Drove thro' his neck, *aslant*: he spurns
And the soul issues through the weapo

Lo! now appa
Aslant the dew-bright earth and colour
He looks in boundless majesty abroad,
And sheds the shining day that burnish
On rocks, and hills, and towers, a
streams,
High gleaming from afar.

ASLEE′P. On sleep. See Sle
This false knight vpon delaie
Hath taried till thei were *aslep*
As he that woll time kepe
His deadly workes to fulfille.
Gower. Con.

How many thousand of my poorest
Are at this hour *asleep*! O gentle slee
Nature's soft nurse, how have I frig

The diligence of trade, and noiseful gain,
And luxury, more late *asleep* were laid:
All was the night's; and, in her silent reign,
No sound the rest of nature did invade. *Dryden.*

For gorg'd with flesh, and drunk with human wine,
While fast *asleep* the giant lay supine
Snoring aloud, and belching from his maw
His indigested foam and morsels raw:
We pray, we cast the lots, and then surround
The monstrous body, stretch'd along the ground.
Id. Virgil, Æneid iii.

There is no difference, between a person *asleep*, and in an apoplexy; but that the one can be awaked, and the other cannot. *Arbuthnot on Diet.*

ASLOPE'. On slope, or slip. See SLOPE.

For many times I have it seen,
That many have begyled been,
For trust that they have set in hope,
Which fell hem afterward *aslope.*
Chaucer. Romaunt of the Rose, fol. 137. c. 1.

Set them not upright, but *aslope*, a reasonable depth under the ground. *Bacon.*

The curse *aslope*
Glanc'd on the ground; with labour I must earn
My bread! what harm? Idleness had been worse;
My labour will sustain me. *Milton.*

The knight did stoop,
And sate on further side *aslope*. *Hudibras.*

Where porters' hogsheads roll from carts *aslope*,
Or brewers down steep cellars stretch the rope;
Where counted billets are by carmen tost,
Stay thy rash step, and walk without the post.
Gay. Trivia, book ii.

ASMODAI, the name given by the Jews to the prince of dæmons; and according to R. Elias, the same with Sammael.

ASMONEUS, or ASSAMONEUS, the father of Simon, and chief of the Asmoneans, a family that reigned over the Jews 126 years.

ASNA, or ESNA, a town in Upper Egypt, seated upon the Nile, believed by some authors to be the ancient Syena, though others say the ruins of it are still to be seen near Assuan. It is so near the cataracts of the Nile, that they may be heard from thence, and it contains several monuments of antiquity; among the rest an ancient Egyptian temple, painted throughout. The columns are full of hieroglyphic figures. A little way from hence are the ruins of an ancient nunnery, said to be built by St. Helena, and surrounded with tombs. Asna is the principal town in these parts, and the inhabitants are rich in corn and cattle.

ASNAPPER, an Assyrian prince, mentioned in Ezra iv. 10, who settled the original Samaritans in the country of the ten tribes. It is uncertain, whether he was Salmaneser or Esarhaddon, or one of their generals.

ASOLA, a town of Upper Italy, in the territory of Brescia, on the Chiese, with a population of 4000. It is twenty miles S.S.E. of Brescia.

ASOLO, a Venetian prefecture, in the March of Treviso, Italy; belonging to Austria. It consists of the town of Asolo, and thirty-six villages, with 25,000 inhabitants. They cultivate grapes, corn, fruit, silk, oil, and garden vegetables, trade in cattle, and manufacture silk and woollen stuffs. The town of Asolo is seated on some agreeable rising grounds, skirted on the north and west by the Musone.

ASOPH, or AZOPH. See AZOPH.

ASOPUS, a town of Laconia, on the Sinus Laconius, with a port in a peninsula, between Boæ to the east, and the mouth of the Eurotas to the west. The citadel only remains standing.

ASOPUS, in ancient geography, the name o several rivers, viz. 1. In Bœotia, which, running from mount Cithæron, and watering the territory of Thebes, separates it from the territory of Platæa, and falls with an east course into the Euripus, at Tanagra. On this river, Adrastus, king of Sicyon, built a temple to Nemesis, and from it Thebes came to be surnamed Asopides. It is now called Asopo. 2. In Peloponnesus, which runs by Sicyon, and with a north-west course falls into the Sinus Corinthiacus, west of Corinth. 3. In Phrygia Major, which with the Lycus washes Laodicea. 4. On the borders of Thessaly, rising in Mount Œta, and falling into the Sinus Maliacus.

ASOR, or ASORUS, in ancient geography, 1. A town in the south-west of Judah, near Ascalon, called also Hazor, and Hasor-Hadata, translated by the seventy *Ασωρη Ταινη*. 2. A town of Galilee; called the capital of all the kingdoms north of Palestine. It was taken by Joshua; the inhabitants were put to the sword, and their houses burnt. It was afterwards rebuilt, but remained still in the hands of the Canaanites, though in the tribe of Naphthali. It lay north of the Lacus Samachonites, called in Scripture the waters of Merom.

ASOTUS, in ichthyology, a species of the silurus.

ASP, } Gr. *ασπαιρω*, to tremble, to quiver.
AS'PEN. } Shaking, trembling; because the leaves of the aspen tree tremble with each breath of air.

This Sompnour in his stirops high he stood
Upon this frere his herte was so wood
That like an *aspen* leef he quoke for ire.
Chaucer. The Sompnour's Prologue, vi. p. 292.

He to him raught a dagger sharp and keene,
And gave it him in hand: his hand did quake
And tremble like a leafe of *aspin* greene.
Spenser's Faerie Queene, book i. c. ix. s. 51.

The *aspen* or *asp* tree hath leaves much the same with the poplar, only much smaller, and not so white. *Mortimer.*

ASP, } Gr. *ασπις*, a serpent, said to be
ASP'ICK. } peculiar to Egypt and Lybia, whose bite is mortal and its effect immediate. Modern naturalists have not yet discovered this reptile.

High-minded Cleopatra, that with stroke
Of *asp's* sting herself did kill. *Faerie Queene.*

Scorpion, and *asp*, and amphisbæna dire,
And dipsas. *Milton.*

ASP, ASPICK, thus denominated from the Greek, *ασπις*, shield; on account of its lying convolved in a circle, in the centre of which is the head, which it exerts, or raises, like the umbo or umbileus of a buckler. This species of serpent is very frequently mentioned by authors; but so carelessly described, that it is not easy to determine which, if any, of the species known at present, may probably be called by this name. It is said to be common in Africa, and about the banks of the Nile; and Bellonius mentions a small serpent which he had met with in Italy, and which had a sort of callous excrescence on the forehead, which he takes to have been the aspis of the ancients. It is with the asp that Cleopatra is said to have despatched herself, and prevented the designs of Augustus, who intended to have carried her captive to adorn his triumphal entry into Rome. But the fact is contested. Brown places it among the vulgar errors. The indications of that queen's having used the ministry of the asp, were only two almost insensible pricks found in her arm; and Plutarch says it is unknown of what she died. At the same time it must be observed, that the slightness of the pricks found in her arm furnishes no presumption against the fact; for no more than the prick of a needle-point dipped in the poison was necessary for the purpose of destroying life. Lord Bacon says, the asp is the least painful of all the instruments of death. He supposes it to have an affinity to opium, but to be less disagreeable in its operation; and his opinion seems to correspond with the accounts of most writers, as well as with the effects described to have been produced upon Cleopatra. The ancients had a plaister called δι Ασπιδων, made of this terrible animal, of great efficacy as a discutient of strumæ and other indurations, and used likewise against pains of the gout. The flesh and skin, or exuviæ of the creature, had also their share in the ancient materia medica.

ASPA, a town of Parthia, now called Ispahan.

ASPALATHUS, African Broom, a genus of the decandria order, diadelphia class of plants; ranking in the natural method under the thirty-second order, papilionaceæ. The calyx consists of five divisions; the pod is oval, and contains two seeds. Of this genus there are nineteen species; all of which are natives of warm climates, and must be preserved in stoves by those who would cultivate them here. The rose wood, whence the oleum Rhodii is obtained, is one of the species, but of which we have no particular description.

Aspalathus, in pharmacy, is also called lignum Rhodium, or rose wood; and by some Cyprus wood: the former on account of its sweet smell, or growth in the island of Rhodes; the latter from its being also found in the island of Cyprus. It was anciently in much repute, as an astringent and strengthener, but is now little used internally. In virtue, taste, smell, and weight, it resembles the lignum aloes; and in physic they are frequently substituted for each other. Aspalathus is chiefly used in scenting pomatums, and liniments.

ASPARAGIN, the name given to white transparent crystals, of a peculiar vegetable principle, which form in asparagus juice after it has been evaporated to the consistence of syrup. They are in the form of rhomboidal prisms, with a slight nauseous taste. They do not change vegetable blues; nor are they affected by hydro-sulphuret of potash, oxalate of ammonia, or acetate of lead; but lime extracts from them ammonia. Along with the asparagin crystals, others in needles of little consistency appear, analogous to mannite, from which the first can be easily picked out.

ASPARAGUS, Sparagus, Sperage, or Sparrow-Grass, a genus of the monogynia order, and the hexandria class of plants; ranking in the natural method under the eleventh order, sarmentaceæ: cal. quinquepartite, and erect; the three inferior petals bent outwards; the berry has three cells, and contains two seeds. There are ten species; but the only one cultivated in the gardens is the common asparagus, with an upright herbaceous stalk, bristly leaves, and equal stipula. The other species are kept only in the gardens of the curious, for the sake of variety. The garden asparagus is cultivated with great care for the use of the table. The propagation of this useful plant is from seed; and, as much of the success depends upon the goodness of the seed, it is much better to save it than to buy. The manner of saving it is this: Mark with a stick some of the fairest buds; and when they are run to berry, and the stalks begin to dry and wither, cut them up; rub off the berries into a tub, and, pouring water upon them, rub them about with your hands; the husks will break and let out the seed, and will swim away with the water in pouring it off; so that in repeating this two or three times, the seeds will be clean washed, and found at the bottom of the tub. These must be spread on a mat to dry, and in the beginning of February, must be sown on a bed of rich earth. They must not be sown too thick, and must be trod into the ground, and the earth raked over them smooth: the bed is to be kept clear of weeds all the summer; and in October, when the stalks are withered and dry, a little rotten dung must be spread half an inch thick over the whole surface of the bed. Next spring, the plants will be fit to plant out; the ground must therefore be prepared for them by trenching it well, and burying a large quantity of rotten dung in the trenches, so that it may lie at least six inches below the surface of the ground: when this is done, level the whole plot exactly, taking out all the loose stones. This is to be done just at the time when the asparagus is to be planted out; which must be in the beginning of March, if the soil is dry, and the season forward; but in a wet soil, it is better to wait till the beginning of April, which is about the season that the plants are beginning to shoot. The season being now come, the roots must be carefully taken up with a narrow-pronged dung-fork, shaking them out of the earth, separating them from each other, and observing to lay all their heads even, for the more conveniently planting them; which must be done in this manner:—Lines must be drawn, at a foot distance each, straight across the bed; these must be dug into small trenches of six inches deep, into which the roots must be laid, placing them against the sides of the trench, with their buds in a right position upwards, and so that, when the earth is raked over them, they may be two inches under the surface of the ground. Between every four rows, a space of two feet and a half should be left for walking in to cut the asparagus. When the asparagus is thus planted, a crop of onions may be sown o the ground, which will not at all hurt it. A month after this, the asparagus will come up when the crop of onions must be thinned, an the weeds carefully cleared away. About Augus the onions will be fit to pull up. In Octobe following, cut off the shoots of the asparagu within two inches of the ground, clear well al weeds away and throw up the earth upon the beds, so as to leave them five inches above the level of the alleys. A row of coleworts may be planted in the middle of the alleys, but nothing must now be sown on the beds. In the spring the weeds must be hoed up, and all the summer the beds kept clear of weeds. In October they must be turned up and earthed again, as the preceding season. The second spring after planting, some of the young asparagus may be cut for the table. The larger shoots should only be taken, and these should be cut at two inches under ground, and the beds every year managed as in the second year. But as some people are very fond of early asparagus, the following directions are given, by which it may be obtained any time in winter:—Plant some good roots at one year old in a moist rich soil, about eight inches apart; the second and third year after planting, they will be ready to take up for the hot-beds; these should be made pretty strong, about three feet thick, with new stable dung that has fermented a week or more; the beds must be covered with earth six inches thick; then, against a ridge made at one end, begin to lay in your plants, without trimming or cutting the fibres; and between every row lay a little ridge of fine earth, and proceed thus till the bed is planted; then cover the bed two inches thick with earth, and encompass it with a straw band; and in a week, or as the bed is in the temper, put on the frames and glasses, and lay on three inches thick of fresh earth over the beds, and give them air and add fresh heat to them as it requires. These beds may be made from November till March, which will last till the natural grass comes on.

The roots have a bitterish mucilaginous taste, inclining to sweetness; the fruit has much the same kind of taste; the young shoots are more agreeable than either. Asparagus promotes appetite, but affords little nourishment. It gives a strong ill smell to the urine in a little time after eating it, and for this reason chiefly is supposed to be diuretic; it is likewise esteemed aperient and deobstruent; the root is one of the five called opening roots. Some suppose the buds to be most efficacious; others, the root; and others, the bark of the root. Stahl is of opinion, that none of them have any great share of the virtues usually ascribed to them. Asparagus appears from experience to contribute very little either to the exciting of urine when suppressed, or increasing its discharge: and in cases where aperient medicines generally do service, this has little or no effect.

ASPASIA, among ancient physicians, a constrictive medicine for the pudenda muliebra. It consisted of wool, moistened with an infusion of unripe galls.

Aspasia, of Miletus, a courtezan, who settled at Athens under the administration of Pericles, and one of the most noted ladies of antiquity. She was of admirable beauty; yet her wit and eloquence, still more than her beauty, gained her extraordinary reputation among all ranks in the republic. In eloquence she surpassed all her contemporaries; and her conversation was so entertaining, and instructive, that notwithstanding the dishonorable commerce she carried on, persons of the first distinction, male and female resorted to her house as to an academy; she even numbered Socrates among her hearers and admirers. She captivated Pericles in such manner, that he dismissed his own wife, to espouse her; and, by her universal knowledge, irresistible elocution, and intriguing genius, she in a great measure influenced the administration of Athens. She was accused of having excited, from motives of personal resentment, the war of Peloponnesus; yet, calamitous as that long and obstinate conflict proved to Greece, and particularly to Athens, Aspasia occasioned still more incurable evils to both. Her example and instructions, formed a school at Athens, by which her dangerous profession was reduced into a system. The companions of Aspasia served as models for painting and statuary, and themes for poetry and panegyric. Nor were they merely the objects but the authors of many literary works, in which they established rules for the behaviour of their lovers, particularly at table; and explained the art of gaining the heart and captivating the affections. The dress, behaviour, and artifices of this class of women, became continually more seductive and dangerous; and Athens thenceforth remained the chief school of vice and pleasure, as well as of literature and philosophy.

ASPASTICUM, or Aspaticum, i. e. a greeting-house; from ασπαζομαι, I salute; in ecclesiastical writers, an apartment adjoining to the ancient churches, wherein the bishops and presbyters sat to receive the salutations of those who came to visit them, desire their blessing, or consult them.

AS'PECT, *v.* & *n.*
Aspec'table,
Aspec'ted,
Aspec'tion.
} Lat. *aspicio*, *aspectum*, (from the obsolete word *spicere*), to look towards. The appearance any thing presents when looked at; the point of view; the relation or influence which one thing has or bears with respect to another.

We see likewise the Scripture calleth Envy, an evil eye, and the astrologers call the evil influences of the stars, evil *aspects*; so that there still seemeth to be acknowledged in the act of envy, an ejaculation or irradiation of the eye. *Lord Bacon's Essays.*

The islands prince, of frame more than celestial,
Is rightly called the all-seeing Intellect;
All glorious bright such nothing is terrestrial;
Whose sun-like face, and most divine *aspect*,
No human sight may ever hope descrie;
For when himself on's self reflects his eye,
Dull and amazed he stands, at such bright majesty.
Fletcher's Purple Island.

If nature's concord broke
Among the constellations war were sprung,
Two planets, rushing from *aspect* malign
Of fiercest opposition, in mid sky
Should combat, and their jarring spheres confound.
Milton's Paradise Lost, book vi.

Happy in their mistake, those people, whom
The northern pole *aspects*; whom fear of death
(The greatest of all human fears) ne'er moves.
Temple.

To this use, of informing us what is in this *aspectable* world, we shall find the eye well fitted.
Ray on the Creation.

Her motions were steady and composed, and her *aspect* serious but cheerful; her name was Patience.
Addison.

Why does not every single star shed a separate influence, and have *aspects* with other stars of their own constellation? *Bentley's Sermons.*

With *aspect* mild, and elevated eye,
Behold him seated on a mount serene,
Above the fogs of sense and passion's storm:
Wrong he sustains with temper, looks on heaven,
Nor stoops to think his injurer his foe;
Nought but what wounds his virtue wounds his peace.
Young.

Aspect, in astronomy and astrology, denotes the situation of the planets and stars with respect to each other. There are five different aspects. 1. Sextile aspect is when the planets or stars are 60° distant, and marked thus ✱. 2. The quartile, or quadrate, when they are 90° distant, marked □. 3. Trine, when 120° distant, marked △. 4. Opposition, when 180° distant, marked ☍. And, 5. Conjunction, both in the same degree, marked ☌. Kepler, who added eight new ones, defines aspect to be the angle formed by the rays of the two stars meeting on the earth, whereby their good or bad influence is measured; for it is to be observed that these aspects, being first introduced by astrologers, were distinguished into benign, malignant, and indifferent; the quartile and malignant being accounted malign; the trine and sextile, benign or friendly; and the conjunction indifferent.

Aspect, in gardening, signifies exposure.

Aspect, Double, is used in painting, where a single figure is so contrived, as to represent two or more different objects, either by changing the eye, or by means of angular glasses. See Optics.

Aspect, in architecture. The aspect of the principal rooms of a house, demands the greatest attention from the architect, especially in an exposed situation. The south-east is the best for Britain; and the south and due east the next. The south-west is the worst, because from that quarter it rains oftener than from any other. A north aspect is gloomy, because deprived of sunshine; but woods look best when viewed from rooms with a north aspect, because all plants and trees are most luxuriant on the side next the sun. An aspect due east is nearly as bad as the north, because there the sun shines only early in the morning; and the aspect due west is intolerable, from the sun dazzling the eye through the greatest part of the day. Hence we may conclude, a square house placed with its front, opposite to the four cardinal points, will have one good and three bad aspects.

ASPEN. or Asp. See Poplar, of which it is a species. The leaves of this tree always tremble. The aspen or asp tree has leaves much the same with the poplar.

ASPER, in commerce, or aspre, a little Turkish silver coin, wherein most of the Grand Seignior's revenues are paid. The asper is worth something more than an English halfpenny. The only impression it bears, is that of the prince's name under whom it was struck. The pay of the Janissaries is from two to twelve aspers per diem.

Asper, in grammar, an accent peculiar to the Greek language, marked thus (ʽ); and importing, that the letter over which it is placed ought to be strongly aspirated, or pronounced as if an *h* were prefixed.

Asper, in ichthyology, a small fish
the Rhone, so called from the roughn
scales. Its head is large, in proporti
body, and of a pointed shape. It has
but its jaws are sharp to the touch. I
dark red color, with large black spo
good to eat, and is esteemed aperitive.

ASPERA Arteria, in anatomy, the
or trachea. See Anatomy.

ASPERJELLOUS, in botany, the na
by Michaeli to that genus of mosses,
Dillenius and others, byssus.

ASPERGILE, or Aspergilium, in a
a long brush made of horse-hair, fixed
dle, wherewith the lustral water was
on the people in lustrations and puri
The ancients, instead of a brush, mad
branches of laurel and olive. It is also
plied to the instrument in Romish chur
which holy water is sprinkled

ASPERIFOLIÆ Plantæ, roug
plants. The name of a class in He
Boerhaave, and Ray's methods, cons
plants which have naked seeds, and who
are rough to the touch. In Tournefort'
these plants constitute the third section
of the second class; and in Linnæus'
method, they make a part of the pentan
nogynia.

ASPERIFOLIATE, or Asperifol
mong botanists, such plants as are roug
having their leaves placed alternately
stalks, and a monopetalous flower divi
five parts. They constitute the forty-
der of plants in the Fragmenta Methodi
of Linnæus, in which are these genera
ortia, cerinthe, symphytum, pulmon
chusa, lithospermum, myosotis, helio
cynoglossum, asperugo, lycopsis, echi
rago: magis minusve, oleraceæ, mucil
et glutinosæ sunt.

Asperity, the inequality of the surfac
body, which hinders the hand from pass
it freely. From the testimony of som
persons, it has been supposed that ev
hath its particular degree of asperity
this has been denied by others. See th
Blind.

ASPERN, a market town, castle, and
of Lower Austria, in the circle of lowe
hartsberg, belonging to the count of
ten miles south east of Laba.

Aspern, a market town of Austria,
on a small arm of the Danube, on the
of the river, at some distance below Vie
scene of a battle fought on the tw
and twenty-second of May, 1809, betwe
naparte and the Austrians. It was co
destroyed at the time, but has since been

ASPER'SE, } Lat. *ad*, and *spargo*,
Asper'sion. } ter. To sprinkle or
metaphorically to censure, to calumniate

In the business of Ireland, besides the op
to *asperse* the king, they were safe enough.
C

Curb that impetuous tongue; nor rashl
And singly mad, *asperse* the sov'reign reig
Unjustly poets we *asperse*;
Truth shines the brighter clad in verse.

He set his voice
At highest pitch, and thus *aspers'd* the king.
Cowper's Iliad, book vi.

Legions of impure spirits were believed to take the possession of the bodies of men, from whence nothing could drive them but *aspersions* of holy water.
Bolingbroke's Essay on Human Knowledge.

ASPERUGO, small wild bugloss, in botany, a genus of the pentandria monogynia class; ranking in the natural method under the asperifoliæ. The calyx of the fruit is compressed, with folds flatly parallel, and sinuous. There are two species, viz. 1. A. Ægyptiaca, a native of Egypt. 2. A. procumbens, or wild bugloss, a native of Britain; which is eaten by horses, goats, sheep, and swine; but cows are not fond of it.

ASPERULA, WOODROOF, in botany, a genus of the monogynia order, and the hexandria class of plants; ranking in the natural method under the forty-seventh order, stellatæ. The corolla is infundibuliform; and the capsule contains two globular seeds. There are two species; which both grow wild in Britain, and therefore are seldom admitted into gardens, viz. 1. A. cynanchica, found on chalky hills. The roots are used for dyeing red in Sweden. 2. A. odorata, a low umbelliferous plant, growing wild in woods and copses, and flowering in May. It has an exceeding pleasant smell, which is improved by moderate exsiccation; the taste is subsaline, and somewhat austere. It imparts its flavour to vinous liquors. Asperula is supposed medicinally to attenuate viscid humors, and strengthen the tone of the bowels; modern practice has nevertheless rejected it.

ASPEYTIA, a town of Spain, in Biscay, seated on the Urola, in a fine valley, near the districts of Loyola and Onis.

ASPHALITES, in anatomy, the fifth vertebra of the loins.

ASPHALTITES, a lake of Judea, so called from the great quantity of bitumen it produces: called also the Dead Sea; and from its situation East, the Salt Sea, the Sea of Sodom, the Sea of the Desart, and the Sea of the Plain, in the sacred writings. It is enclosed on the east and west with high mountains; on the north it has the plain of Jericho; or, if we take in both sides of the Jordan, it has the Great Plain, properly so called, on the south, which is open, and extends beyond the reach of the eye. Josephus makes this lake 580 furlongs in length, from the mouth of the Jordan to the opposite end, that is about twenty-two leagues; and about 150 furlongs, or six leagues, in its greatest breadth; but our modern accounts commonly give it twenty leagues in length, and six or seven in breadth. On the west side of it is a kind of promontory, where the remains of Lot's metamorphosed wife were a long time said to be visible. Josephus says this pillar was standing in his time; and Mr. Maundrell was shown a block or stump of it. In what has been said and written of the Lake Asphaltites, fable is much blended with truth. We are told that it arose from the submersion of the vale of Siddim, where once stood, as is commonly reported, the three cities which perished by miraculous conflagration, with Sodom and Gomorrah; and this lake has been regarded as a lasting monument of the just judgment of God, on the abominations for which they perished. It has been stated that its waters are so impregnated with salt, sulphur, and other bituminous matter, that nothing will sink or live in them; and that it emits such a horrid smoke that the very birds die in attempting to cross over it. The description likewise of the apples that grew about it, fair without, and only ashes and bitterness within, were looked upon as a further demonstration of God's anger. Travellers have also described the country round about as sulphureous, bituminous, and suffocating; and it has even been affirmed that the ruins of the five cities are still to be seen through the waters in clear weather.

It appears to be true, that the quantity of salt, alum, and sulphur, with which they are impregnated, render its waters so much specifically heavier (Dr. Pococke says one fifth) than fresh water, that bodies will not easily sink in them: yet that author and others assure us they have swam and dived in it. Dr. Pococke also, though he neither saw fish nor shells, tells us, on the authority of a monk, that fish had been caught in it; and M. Volney affirms that it is very common to see swallows skimming its surface, and dipping for the water necessary to build their nests. The soil around it, he adds, impregnated with salt, produces no plants; and the air itself, which becomes loaded with it from evaporation, and which receives also the sulphureous and bituminous vapours, cannot be favorable to vegetation: hence the deadly aspect which reigns around this lake. In other respects the ground about it, however, is not marshy, and its waters are limpid and incorruptible, as must be the case with a dissolution of salt. On the south-west shore are mines of fossil salt, of which I have brought away several specimens. They are situated on the side of the mountains which extend along that border; and from time immemorial have supplied the neighbouring Arabs, and even the city of Jerusalem. We find also on this shore fragments of sulphur and bitumen, which the Arabs convert into a trifling article of commerce: as also hot fountains and deep crevices, which are discovered at a distance by little pyramids built on the brink of them. Likewise a sort of stone, which on rubbing emits a noxious smell, burns like bitumen, receives a polish like white alabaster, and is used for the paving of court-yards. At intervals we also meet with unshapen blocks, which prejudiced eyes mistake for mutilated statues, and which pass with ignorant and superstitious pilgrims for monuments of the adventure of Lot's wife; though it is no where said she was metamorphosed into stone like Niobe, but into salt, which must have melted the ensuing winter.'

This lake is at present called by the Arabs Almotanah and Bahret Lout, and Ula Deguis by the Turks. It is remarkable that but one European has hitherto succeeded in making the circuit of it; and Nau, who in his travels had recorded this expedition of Daniel, abbot of St. Saba, states on his authority, that 'the Dead Sea, at its extremity, is separated as it were into two parts, and that there is a way by which you may walk across it, being only mid-leg deep, at least in summer; that there the land rises, and bounds another small lake of a circular or rather oval figure, surrounded with plains and mountains of sand, and that the neighbouring country is peopled by innumerable Arabs. Seetzen in the year 1805-6 passed round the southern extremity, but a short account only of his route, in a correspondence with M. de Zach, printed by the Palestine Association in 1810, has yet appeared. Mr. Burckhardt was unable to reach its borders. He was informed in the neighbourhood that there were spots in a ford about three hours north of Szaffye (the extreme southern point of the lake), in which the water is quite hot, and the bottom of red earth. This ford may be crossed in three hours and a half: the water here is generally not more than two feet deep, and it is probable there are hot springs in the bottom. It is so strongly impregnated with salt that the skin peels off the legs of those who wade across it.

M. de Chateaubriand, who visited this country in 1807, has given the first decided testimony that the Lake Asphaltites abounds with fish. He reached it when it was dark, and passed the night among some Arab tents. 'About midnight,' says he, 'I heard a noise upon the lake, and was told by the Bethlehemites, who accompanied me, that it proceeded from legions of small fish, which come out and leap about the shore.' He speaks in the following terms of its saline properties; 'The first thing I did on alighting was to walk into the lake up to my knees, and to taste the water. I found it impossible to keep it in my mouth. It far exceeds that of the sea in saltness, and produces upon the lips the effect of a strong solution of alum. Before my boots were completely dry they were covered with salt: our clothes, our hats, our hands, were in less than three hours impregnated with this mineral.'

A modern Scottish traveller, Mr. Gordon of Clunie, who bathed in it, brought home a phial of its water, and Dr. Marcet found its specific gravity to be 1·211; a degree of density, says he, 'not to be met with in any other natural water.' The whole process with its results is detailed in the Philosophical Transactions for 1807. It was found that 100 grains of the water contain the following substances in the undermentioned proportions:

	grains.
Muriat of lime . .	3,920
Muriat of magnesia	10,246
Muriat of soda . .	10,360
Sulphat of lime .	0,054
	24,580

Another celebrated chemist, M. Klaproth, who procured a specimen brought from the East by the abbé Martin, found the specific gravity to be 1·245 instead of 1·211; agreeing in this respect more nearly with Macquer and Lavoisier, who stated it at 1·240. But the specific gravity of Dr. Marcet's specimen may have been less from its having been taken from the lake not far from the influx of the Jordan, where it might be somewhat diluted.

Dr. Clarke says that the inhabitants
country still regard the Dead Sea with f
of terror; owing probably to the traditio
its waters cover the engulphed cities of
and Gomorrah, or to the ideas entertained
peculiar insalubrity of its exhalations. B
greatly to be regretted that this travelle
prevented by the Arabs from exploring th
which he only saw at a distance.

Hasselquist asserts the apples of Sodom to
production of the solanum melongena of Li
This is found, he says, in great abundance
Jericho and in the neighbourhood of the De
The dust with which it is sometimes filled
work of an insect (tenthredo) which pul
the whole of the inside, leaving the rind
and unchanged in color. M. Seetzen
Kerek a species of cotton which he was to
produced from a fruit resembling a pomeg
growing on the borders of the Dead Sea,
thinks it is this pulpless fruit which is th
lum sodomeum. Viscount Chateaubrian
a third fruit, which he conjectures to
famous apples in question, growing on a
shrub; and which, before it is ripe is fille
a corrosive and saline juice; when dried it
a blackish seed, which may be compa
ashes, and which in taste resembles bitter p

Asphaltum, Bitumen Judaicum, or
Pitch, is a light solid bitumen of a dusk
on the outside, and a deep shining black
of very little taste, and having scarce
smell, unless heated, when it emits a
pitchy one. It is found in a soft or liqui
on the surface of the Dead Sea, and
grows dry and hard. The same kind o
men is met with likewise in the earth in
America, and in some places of Europe,
Carpathian Hills, France, &c. The most
dant deposits of this substance, in modern
are said to be in the islands of Barbado
Trinidad; in the former it is found as an
bituminous earth, but, being in a state o
impurity, is only used as a coal for fuel.
latter island is a complete lake of this sub
A specimen from Albania of the specific
of 1·205, examined by M. Klaproth, was
to be soluble only in oils and in æther.
parts of rectified oil of petroleum dissolv
of the asphaltum without heat in twen
hours; 100 grains of asphaltum afforded
bituminous oil, 6 of water faintly ammo
30 of charcoal, $7\frac{1}{2}$ of silex, $7\frac{1}{2}$ of alumin
lime, $1\frac{1}{4}$ oxide of iron, $\frac{1}{2}$ oxide of man
and 36 cubic inches of hydrogen gas. T
asphaltum was formerly used in embalm
bodies of the dead. At present the thi
solid asphalta are employed in Egypt,
and Persia, as pitch for ships; the fluid
burning in lamps and for varnishes.
writers relate that the walls of Babylon
temple of Jerusalem were cemented wi
men instead of mortar. This much is
that a true natural bitumen, that for
which is found in the district of Ne
proves an excellent cement for walls
ments, and other purposes; uncommon
very durable in the air, and not penetr
water. The watch and clock-makers us

of asphaltum, fine lamp black, and oil
or turpentine, for drawing the black
n dial-plates; this composition is pre-
efly at Augsburg and Nuremburg.

ODEL, Asphodelus, or King's Spear,
, a genus of the monogynia order, and
a class of plants. The calyx is divided
parts; and the nectarium consists of six
vering the nectarium. There are five
viz. 1. A. albus, the white asphodel,
l-shaped leaves, has roots composed of
es and knobs at bottom; the leaves are
ost triangular, and hollow like the keel
; the stalks seldom rise above two feet
d divide into several spreading branches;
terminated by loose spikes of white
2. A. luteus, or common yellow aspho-
roots composed of many thick fleshy
hich are yellow, and joined to a head at
from whence arise strong round single
arly three feet high, garnished on the
art with yellow star-shaped flowers,
pear in June, and the seeds ripen in
3. A. nonramosus, or the unbranched
, roots like the ramosus (which see), but
s are longer and narrower; the stalks
; the flowers appear at the same time
former, are of a purer white, and grow
spikes. 4. A. ramosus, or branching
, has roots composed of fleshy fibres, to
which is fastened an oblong bulb as
small potatoe; the leaves are long and
having sharp edges; between these
the flower-stalks, which arise more
feet high, sending forth many lateral
They come out in the beginning of
the seeds ripen in autumn. 5. A. stu-
annual branching spiderwort, hath
posed of many yellow fleshy fibres;
are spread out from the crown of the
e to the ground, in a large cluster;
convex on their underside, but plain
The flower-stalks rise immediately from
and grow about two feet high, dividing
or four branches upward, which are
with white starry flowers, with purple
the outside. These flower in July and
nd their seeds ripen in October.

y to increase these plants is by parting
in August, before they shoot up their
en leaves. They may also be raised
ds sown in August; and the August
the plants produced from these may
planted into beds, and will produce
he second year. They must not be
small borders among tender flowers,
will draw away all the nourishment
e every thing else. The Lancashire
is thought to be very noxious to sheep,
through poverty of pasture they are
ed to eat it; although they are said to
much in their flesh at first, they after-
with symptoms of a diseased liver.
e plant of which such wonderful tales
told by Pauli Bartholine, and others,
ftening the bones of such animals as
t; and which they thence called gramen
m. Horned cattle eat it without any ill

ASPHURELATA, in natural history, are semi-metallic fossils, fusible by fire, and not malleable in their purest state, being in their native state intimately mixed with sulphur and other adventitious matter, and reduced to what are called ores. Of this series of fossils there are five bodies, each of which makes a distinct genus; viz, antimony, bismuth, cobalt, zinc, and quicksilver.

ASPHYXIA; from *α* privative, and *σφυξις*, a pulse; in medicine, the state during life in which the pulsation of the heart and arteries cannot be perceived. Medical writers usually divide this suspended animation into lipothymia, apoplexia, syncope, submersio, suspensio, and congelatio. Mr. Sage has published a treatise recommending the volatile alkali fluor as the most effectual remedy in asphyxies. Asphyxia is also used by some for a privation of pulse in a part of the body, e. g. in the arm, &c.

The following extraordinary case of asphyxia is related by Dr. Cheyne, in his English Malady, p. 307. '*Case of the Hon. Colonel Townshend.*—Col. Townshend, a gentleman of excellent natural parts, and of great honor and integrity, had for many years been afflicted with a nephritic complaint, attended with constant vomitings, which had made his life painful and miserable. During the whole time of his illness he had observed the strictest regimen, living on the softest vegetables, and lightest animal foods, drinking asses milk daily, even in the camp; and for common drink, Bristol water, which the summer before his death he had drank on the spot. But his illness increasing, and his strength decaying, he came from Bristol to Bath in a litter, in autumn, and lay at the Bell-inn. Dr. Baynard (who is since dead) and I were called to him, and attended him twice a day for about the space of a week, but his vomitings continuing still incessant and obstinate against all remedies, we despaired of his recovery. While he was in this condition he sent for us early one morning: we waited on him with Mr. Skrine, his apothecary, (since dead also); we found his senses clear and his mind calm, his nurse and several servants were about him. He had made his will and settled his affairs. He told us he had sent for us to give him some account of an odd sensation he had for some time observed and felt in himself; which was that, composing himself, he could die or expire when he pleased, and yet, by an effort or some how, he could come to life again; which it seems he had sometimes tried before he had sent for us.

'We heard this with surprise; but as it was not to be accounted for from any common principles, we could hardly believe the fact as he related it, much less give any account of it, unless he should please to make the experiment before us, which we were unwilling he should do, lest in his weak condition he might carry it too far. He continued to talk very distinctly and sensibly above a quarter of an hour about this (to him) surprising sensation, and insisted so much on our seeing the trial made, that we were at last forced to comply. We all three felt his pulse first; it was distinct, though small and thready; and his heart had its usual beating. He composed himself on his back, and lay in a still position some time; while I held his right hand, Dr. Baynard laid his hand on his heart, and Mr. Skrine held a clear looking-glass to his mouth. I found his pulse sink gradually, till at last I could not feel any by the most exact and nice touch. Dr. Baynard could not feel the least motion in his heart, nor Mr. Skrine the least soil of breath on the bright mirror he held to his mouth; then each of us by turns examined his arm, heart, and breast; but could not, by the nicest scrutiny, discover the least symptom of life in him. We reasoned a long time about this odd appearance as well as we could, and all of us judging it inexplicable and unaccountable, and finding he still continued in that condition, we began to conclude that he had indeed carried the experiment too far, and at last were satisfied he was actually dead, and were just ready to leave him. This continued about half an hour, by nine o'clock in the morning, in autumn. As we were going away we observed some motion about the body, and, upon examination, found his pulse and the motion of his heart gradually returning; he began to breathe gently, and speak softly; we were all astonished to the last degree at this unexpected change, and after some further conversation with him, and among ourselves, went away fully satisfied as to all the particulars of this fact, but confounded and puzzled, and not able to form any rational scheme that might account for it. He afterwards called for his attorney, added a codicil to his will, settled legacies on his servants, received the sacrament, and calmly and composedly expired about six o'clock that evening. Next day he was opened (as he had ordered); his body was the soundest and best made I had ever seen; his lungs were fair, large, and sound, his heart big and strong, and his intestines sweet and clean; his stomach was of a due proportion, the coats sound and thick, and the villous membrane quite entire; but when we came to examine the kidneys, though the left was perfectly sound and of a just size, the right was about four times as big, distended like a blown bladder, and yielding as if full of pap; he having often passed a wheyish liquor, after his urine, during his illness. Upon opening this kidney we found it quite full of a white chalky matter, like plaster of Paris, and all the fleshy substance dissolved and worn away by what I called a nephritic cancer. This had been the source of all his misery; and the symptomatic vomitings, from the irritation on the consentient nerves, had quite starved and worn him down. I have narrated the facts as I saw and observed them, deliberately and distinctly, and shall leave the philosophic reader to make what inferences he thinks fit. The truth of the material circumstances I will warrant.'

Aspic, in botany, a plant which grows in plenty in Languedoc, in Provence, and especially on the mountain of St. Baume in France. It is a kind of lavender, nearly like what grows in our gardens, both with regard to the figure and color of its leaves and flowers. The botanists call it lavendula mas, or spica nardi, pseudo nardus, &c.

ASPILATES, or Asplenites, in the writings of the ancients, the name of a stone, fam its virtues against the spleen, and man disorders; it was to be applied externall fastened to the part with camel's hair.

ASPINY, or Angliary-thorn, a dru in medicine, on which particular duties posed by the tariff of the custom-house at

ASPIRE′,
Aspir′ant,
Aspir′ate, *v. n.* & *adj.*
Aspira′tion,
Aspire′ment,
Aspir′er,
Aspir′ing.

Aspiro; fro and *spiro*, to b to search afte gently, and i sequence of t duous exerti breathe freq and with apparent difficulty; to pant af pursue with eagerness an object deemed of our ambition; to desire with eagernes aspirate is to breathe strongly upon a le sounding it.

> 'Tis he; I ken the manner of his gait:
> He rises on his toe; that spirit of his
> In *aspiration* lifts him from the earth.
>
> *Sha*

> Horace did ne'er *aspire* to epic bays;
> Nor lofty Maro stoop to lyrick lays.
>
> *Ros*

> Till then a helpless, hopeless, homely swa
> I sought not freedom, nor *aspired* to gain.

> *Aspiring* to be gods, if angels fell,
> *Aspiring* to be angels, men rebel.

> *H* is only a guttural *aspiration*, i. e. a more impulse of the breath from the lungs.

> A soul inspired with the warmest *aspiratio* celestial beatitude, keeps its powers attentive.

> Know thine own worth, and reverence the
> Wilt thou debase the heart which God refined
> No! let thy heaven-taught soul to heaven *asp*
> To fancy, freedom, harmony, resign'd;
> Ambition's groveling crew for ever left behind
>
> *Beattie's*

> Some more *aspiring* catch the neighbouring
> With clasping tendrils, and invest her branch.

> Ye stars! which are the poetry of heave
> If in your bright leaves we would read the
> Of men and empires,—'tis to be forgiv'n,
> That in our *aspirations* to be great,
> Our destinies o'erleap their mortal state,
> And claim a kindred with you;———
>
> *Lord Byron's Childe*

ASPIUS, in ichthyology, a species cyprinus, belonging to the abdominal ord is met with in the lakes of Sweden.

ASPORTA′TION. Lat. *ad*, and *por* carry; a carrying to.

> A bare removal from the place in which he the goods, though the thief does not quite with them, is a sufficient asportation or away. *Bla*

ASPOTAGOEN Mount, a sea-mark coast of Nova Scotia, from which ships from Europe to Halifax generally look o rises on the promontory, between Mahor Margaret's bay, to about 500 feet above th of the sea.

AS′PRE,
As′prely,
As′preness,
As′perate,
Aspe′rity,
As′perous.

Lat. *asper*, rough in ture: applied to that w harsh, rugged, grating, morose.

Black and white are the most *asperous* and unequal of colours; so like, that it is hard to distinguish them: black is the most rough. *Boyle.*

I hope it is no very cynical *asperity*, not to confess obligations where no benefit has been received, or to be unwilling that the public should consider me as owing to a patron, that which Providence has enabled me to do for myself. *Dr. S. Johnson.*

The patience of Job is proverbial. After some of the convulsive struggles of our irritable nature, he submitted himself, and repented in dust and ashes. But even so, I do not find him blamed for reprehending, and with a considerable degree of *asperity*, those ill-natured neighbours of his who visited his dunghill to read moral, political, and œconomical lectures on his misery. *Burke.*

ASPY', v. & n. See Espy.

> In due season, as she alway *aspied*
> Every thing to execute conueniently,
> The one louer first frendly she eied,
> The second she offred the cuppe curtesly.
> *Chaucer. The Rein of Loue.*

For Jon seide to Eroude, it is not leveful to thee to haue the wyf of thi brother, and Erodias leide *aspies* to him and wolde sle him and myghte not.
Wiclif. Mark, ch. vi.

ASRAEL, the angel, according to the Mahommedan system, who is appropriated to take care of the souls of those who die.

ASS,
As'inine,
Ass'like.
} Lat. *asinus*, a well known animal.

> You have among you many a purchas'd slave;
> Which, like your *asses* and your dogs and mules,
> You use in abject and in slavish part,
> Because you bought them. *Shakspeare.*

You shall have more ado, to drive our dullest youth, our stocks and stubs, from such nurture; than we have now, to hale our choicest and hopefullest wits, to that *asinine* feast of sow-thistles and brambles. *Milton.*

Ass, in zoology. See Equus.

Ass, Coronation of the, in antiquity, was a part of the ceremony of the feast of Vesta, wherein the bakers put crowns on the heads of these quadrupeds; Ecce coronatis panis dependet asellis! Hence, in an ancient calendar, the ides of June are thus denoted: Festum est Vestæ. Asinus coronatur! This honor it seems was done the beast, because, according to the mythology, by its braying it had saved Vesta from being ravished by the Lampsacan god. Hence the formula, Vestæ delicium est asinus.

ASSAC, or Assax, in the materia medica of the ancients, the name given by the Arabians to the gum ammoniac of the Greeks; but by many of the qualities attributed to this drug it does not appear to be the same that is now called so.

ASSACH, or Assath, a kind of purgation, anciently used in Wales, by the oaths of 300 men.

ASSAI, in music, signifies quick; or, according to others, that the motion of the piece be kept in a middle degree of quickness or slowness: as, assai allegro, assai presto. See Allegro and Presto.

ASSAIL',
Assail'able,
Assail'ant, v. & *adj.*
Assail'er,
Assail'ment,
} Fr. *assaillir*, Lat. *adsalire*, to leap upon. To assault; to make a sudden and vehement attack by various means of annoyance.

> So, when he saw his flatt'ring arts to fail,
> With greedy force he 'gan the fort t' *assail.*
> *Faerie Queene*

> I'll put myself in poor and mean attire,
> And with a kind of umber smirch my face;
> The like do you: so shall we pass along,
> And never stir *assailants.* *Shakspeare.*
> My gracious lord, here in the parliament
> Let us *assail* the family of York. *Id.*
> She will not stay the siege of loving terms,
> Nor bide th' encounter of *assailing* eyes. *Id.*
> How have I fear'd your fate! but fear'd it most,
> When love *assail'd* you on the Libyan coast.
> *Dryden.*

> Prompt to *assail* and careless of defence,
> Invulnerable in his impudence;
> He dares the world; and eager of a name,
> He thrusts about, and jostles into fame.
> *Id. Hind and Panther.*
> All books he reads, and all he reads *assails*,
> From Dryden's Fabies down to D—y's Tales.
> *Pope.*

Sensible of their own force, and allured by the prospect of so rich a prize, the northern barbarians, in the reign of Arcadius and Honorius, *assailed* at once all the frontiers of the Roman empire. *Hume.*

> When winds the mountain oak *assail*,
> And lay its glories waste,
> Content may slumber in the vale,
> Unconscious of the blast. *Beattie.*

ASSAM, or Asham, a country between Bengal and Thibet, 700 miles in length, by about 70 in breadth. It is intersected by the Brahmapootra and several rivers. On the north it is bounded by the mountains of Bootan and Thibet, on the south by the Garrow mountains, on the west by Bengal and Bisnee, and on the east by the tributaries of Ava and China. Assam is very fertile, and produces a considerable quantity of gold, found in the beds of the rivers; it also yields ivory, lac, pepper, silk, and cotton, and exports a considerable quantity of borax and musk, said to be procured from Bootan and Thibet. Its imports from Bengal are principally salt, various European commodities, and a few fine muslins. The inhabitants are genuine Hindoos, and are very shy of permitting foreigners to come among them. During the period that the Afghans and Moguls had possession of Bengal they frequently invaded this country, and even took possession of Ghergong the capital, but the unhealthiness of the climate compelled them always to retire with great loss. In the year 1793 a detachment of the East India Company's troops, under the command of Colonel Welsh, entered Assam for the purpose of reinstating the rajah Surjee Deo; and, in consequence of the services then rendered him, the rajah established a reciprocal liberty of commerce between himself and the British; and it was finally agreed that no European merchant or adventurer, of any description, should be allowed to fix his residence in Assam, without having previously obtained the permission of the British government, and of Maha Rajah Surjee Deo, of Assam.

ASSANCALA, or Assancale, a strong town in Armenia, near the river Arras, in the road between Erzerum and Erivan, noted for its hot baths. It stands on a high hill, twenty-two miles east of Erzerum; the walls are built in a spiral line all round the rock, and strengthened with square towers. The ditches are about two fathoms over, cut out of hard rock.

ASSAPOORY, in natural history, a name given by the people of the East Indies to a peculiar species of slate, which they use in medicine, reducing it to powder, and strewing it on burning coals that the sick person may receive the fumes of it. It is principally used for children when they are disordered by taking cold. The smell of it, while burning, is very offensive.

ASSARIUM, a small copper coin, being a part of the as. The word is used by Suidas indifferently with *οβολος*, and *νομισμα*, to denote a small piece of money; in which he is followed by Cujacius, who defines *ασσαριον*, by minimus æris nummus. We find mention of the assarion in Matthew, chap. x. ver. 29., translated a farthing.

ASSARON, an ancient Jewish measure of capacity, equal to the tenth part of an ephah. The assaron is the same with the omer. Josephus calls it *εσσαρον*; in the Hebrew it is written assarith. It was the measure of manna appointed for each person.

ASSAS'SIN, *v.* & *n.*
ASSAS'SINACY,
ASSAS'SINATE, *v.* & *n.*
ASSASSINA'TION.
} The etymology of this word has given rise to much learned discussion, and the question is still undecided. Applied to one who attacks and kills those unprepared for defence, by treachery, or sudden violence.

It were done quickly; if th' *assassination*
Could trammel up the consequence. *Shakspeare.*

Such usage as your honourable lords
Afford me, *assassinated* and betray'd;
Who durst not, with your whole united pow'rs,
In fight withstand one single and unarm'd.
Milton.

The Syrian king; who, to surprise
One man, *assassin* like, had levy'd war,
War unproclaim'd. *Id.*

The duke finished his course by a wicked *assassination.* *Clarendon.*

In the very moment, as the knight withdrew from the duke, this *assassinate* gave him, with a back blow, a deep wound into his left side. *Wotton.*

The old king is just murdered; and the person that did it is unknown—Let the soldiers seize him, for one of the *assassinates*; and let me alone, to accuse him afterwards. *Dryden.*

Here hired *assassins* for their gain invade;
And treach'rous pois'ners urge their fatal trade.
Creech.

When she hears of a murder, she enlarges more on the guilt of the suffering person, than of the *assassin.* *Addison.*

Orestes brandish'd the revenging sword;
Slew the dire pair; and gave to fun'ral flame
The vile *assassin*, and adult'rous dame, *Pope.*
Useful, we grant; it serves what life requires;
But, dreadful too, the dark *assassin* hires. *Id.*

ASSASSINS, a tribe or clan in Syria, called also Ismaelians and Batanists, or Batenians. These people probably owed their origin to the Karmatians, a famous heretical sect among the Mahommedans, who settled in Persia about the year 1090; whence, in process of time, they sent a colony into Syria, where they became possessed of a considerable tract of land among the mountains of Lebanon, extending itself from the neighbourhood of Antioch to Damascus. The first chief and legislator of th
ordinary tribe was Hassan Sabah, a
impostor; who, by his artifices, made
and implicit slaves of his subjects. Th
gion was compounded of that of the M
Jews, the Christians, and the Mahomn
but the capital article of their creed wa
lieve that the Holy Spirit resided in thei
that his orders proceeded from God hims
were real declarations of the divine p
To this monarch the orientals gave the
Scheik: but he is better known in Eu
the name of the Old Man of the M
This chief, from his residence on mount L
sent, like a vindictive deity, inevitable d
all quarters of the world; and many sov
paid secretly a pension to the Scheik,
safety of their persons. The Knights T
alone dared to defy his secret machinatio
open force. Indeed, they were a per
dispersed body, not to be cut off by m
or assassinations. In 1090, Mâlek Shâ
sultan of the Seljukians, of Iran, sent
senger to Hassan, the Old Man of that
calling on him for obedience, and accom
the demand with threats in the case of
fusal. Hassan desired the ambassador m
admitted; and having assembled around
troops, commanded one of them to d
dagger, and plunge it into his own bre
man, without the slighest hesitation,
himself to the heart, and fell dead at h
reign's feet. He then commanded a se
precipitate himself from the nearest tow
was instantaneously obeyed. 'Go,' said
'to the sultan, your master, and inform h
I have no other reply to make him, ex
that I have seventy thousand troops
obedient with those you have this day wit
The sultan took the hint; and having,
Amed states, other matters in his hands,
it not advisable to prosecute a war agai
prince.

In 1192, the assassins penetrated the
of Courade, marquis of Montserrat, w
displeased them, and put him to dea
1213, they assassinated Lewis of Bavaria
lakn, a khan of the Mogul Tartars, in t
655 of the Hegira, or 1254 of the Christi
entered their country, and dispossessed
several places. In 1257, the Tartars co
them and killed their prince; but it was
1272, that they were totally extirpat
achievement owing principally to the cond
intrepidity of the Egyptian forces sent
them by the sultan Bibaris.

ASSAULT', *v.* & *n.*
ASSAULT'ING, *n.*
ASSAULT'ABLE,
ASSAULT'ER.
} *Assilio, assult*
ASSAIL.

Themselves at discord fell,
And cruel combat joined in middle spac
With horrible *assault* and fury fell.
Faerie

It hath been ever a dangerous policy of
assault the best; he knows that the multitud
say of bees, will follow their master.
Hall's Conten

After some unhappy *assaults* upon the pr

ASSAYING.

Fig. 1.

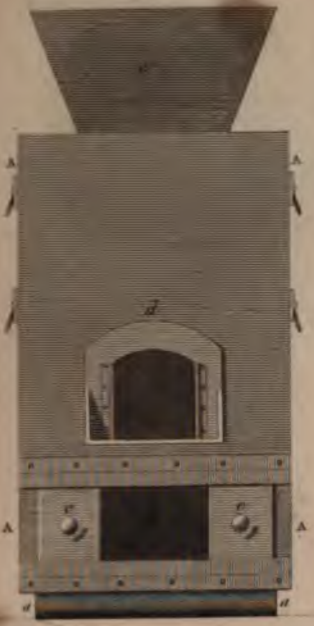


Fig. 2.

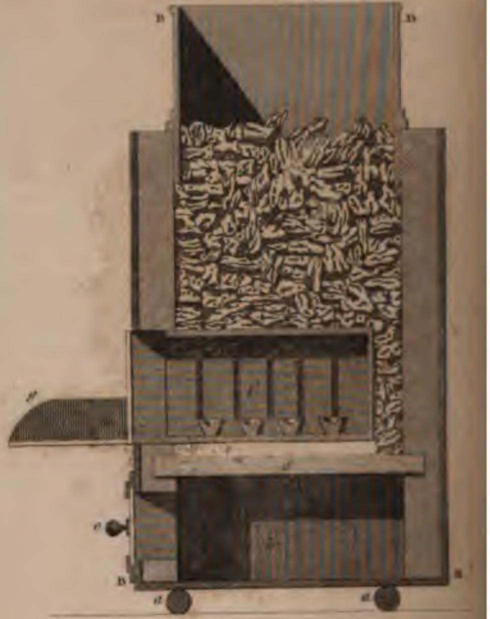


Fig. 3.

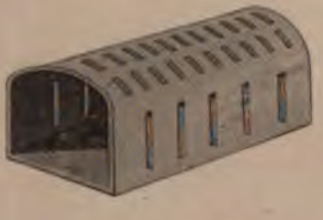
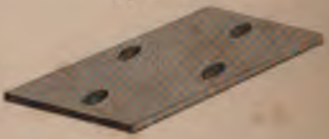


Fig. 4.



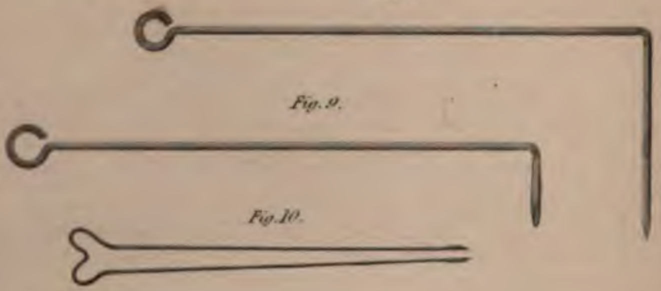


Fig. 8.

Fig. 9.

Fig. 10.

Fig. 6.

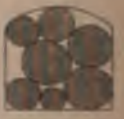


Fig. 5.

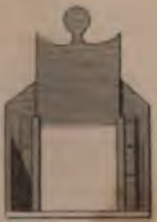


Fig. 11.

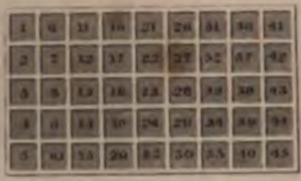
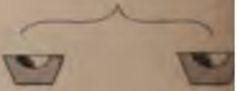


Fig. 7.



London. Published by T. T. & J. Tegg 73, Cheapside.

[illegible]

rliament, which produced its dissolution,
wed a composure. *Clarendon.*
s built upon narrow foundations, are very
supported against the *assaults* of opposition.
Locke.
ng granted the Jews, to gather themselves
and to stand for their life, to destroy all
, that would *assault* them. *Esther*, viii. 11.

the gates, the cries of babes new-born,
e had from their tender mothers torn,
s ears. *Dryden.*

rsed steel, and more accursed gold,
chief birth, and made that mischief bold;
le death did wretched man invade,
ted, and by gold betray'd. *Id.*

r liking their eloquence, nor fearing their
s esteemed few swords, in a just defence,
ist many unjust *assaulters*. *Sidney.*

s just rebuke inflamed the Lycian crew,
oin, they thicken, and th' *assault* renew;
r'd th'embodied Greeks their fury dare,
x'd, support the weight of all the war.
Pope. Homer's Iliad, xii. 505.

LT, in law, is an attempt to beat another,
be committed without touching him: as
fts up his cane or fist in a threatening
at another; or strikes at him, but misses
s is an assault, insultus, which Finch
to be 'an unlawful setting upon one's
This also is an inchoate violence,
g considerably higher than bare threats;
refore, though no actual suffering is
yet the party injured may have redress
of trespass vi et armis, wherein he
ver damages as a compensation for the

T, in the military art, a furious effort
arry a fortified post, camp, or fortress,
he assailants do not screen themselves
orks: while the assault continues, the
ease, for fear of killing their own men.
, v. & n. Fr. *essayer*, Ital. *assagiare*,
amine, prove; to submit to experiment.

hat to bounty never cast his mind;
ht of honour never did *assay*
breast. *Spenser.*
ard with patience all, unto the end;
ve, to master sorrowful *assay*.
Faerie Queene.

Bryan obtained leave of the general, a
ay them; and so, with some horsemen,
m home. *Hayward.*

unweighed behaviour hath this drunkard
of my conversation, that he dares in this
ay me! *Shakspeare.*

Be sure to find,
I foretell thee; many a hard *assay*
ngers, and adversities, and pains,
ou of Israel's sceptre get fast hold. *Milton.*

men he prest but late
rd *assays* unfit, unsure y need;
rn'd to point, in well attempted plate.
Fairfax.

ce *assay'd* to speak; her accents hung,
nd dy'd unfinish'd on her tongue,
d into sighs: with long delay
eturn'd; and found the wonted way.
Dryden's Fables.

NG, or ESSAYING, in metallurgy, is
of ascertaining the actual quantity of
l or silver in a given metallic mass. The term might, with equal propriety, be applied to ascertaining the presence and quantity of any metal, perfect or imperfect, in a mass of ore: but it has, from the universal value of the pure or precious metals, been gradually appropriated to the best modes of separating them from all admixture, the baser metals being considered by the assayer as of no value or consideration. We thus, therefore, apply the term in this paper; referring to the article METALLURGY, and the names of other metallic ores, in their alphabetical places, for more general observations.

Assaying is a species of chemical analysis, owing its origin probably, like the rest of the modern terms of chemistry, to the alchemy of darker ages. In this country the Liber Niger Scacarii, cited by Du Cange, attributes the first assay of money to the bishop of Salisbury, a royal treasurer, in the reign of Henry I. It states, that if the examined money was found to be deficient above sixpence in the pound, it was not deemed lawful money of the king, Du Cange, Gloss. i. p. 343. And thus is explained the first application of the terms arsas and arsuram, to money, in the Exchequer-book. But, it is clear, that some species of assay was practised by our ancestors as early as the Norman conquest, Doomsday-book expressly stating, vol. i. f. 15, 16, that £65 of coined money was only worth £50 in pure silver, 'according to the assay of the Mint.' This is the passage: 'Totum manerium T. R. E. et post valuit xl. libras. Modo similiter xl. lib. Tamen reddit 2 lib. ad arsuram et pensum quæ valent lxv. lib.' It also appears, by the same authority, that the king had this right of assay in several places beside the capital. It is remarkable, as Mr. Turner has observed, that we have no Anglo-Saxon gold coins, though numerous silver coins of that period have come down to us.* That learned historian thinks, that both gold and silver uncoined, were, however, in circulation at this date. According to Dr. Henry's account of the conduct of Henry VIII. in respect to the coinage, it became indeed, most important that some system should be adopted for regulating the standard value of our coins.

'That monarch,' he remarks, 'after he had squandered all his father's treasures, the grants he had received from parliament, and the great sums he had derived from the dissolution of the religious houses, began to diminish his coins both in weight and fineness. This diminution at first was small, in hopes, perhaps, that it would not be perceived; but, after he had got into this fatal career, he proceeded by rapid steps to the most pernicious lengths. In the thirty-sixth year of his reign, silver money of all the different kinds was coined, which had only one-half silver and the other half alloy. He did not even stop here; in the last year of his reign, he coined money that had only four ounces of silver and eight ounces of alloy in the pound weight; and the nominal pound of this base money was worth only 9*s*. 3¾*d*. of our present money. He began to debase his gold coins at the same time, and proceeded by the same degrees. But it would be tedious to follow him in every step. In this degraded and debased condition Henry the Eighth left the money of his kingdom to his son and successor Edward the Sixth. This shameful debasement of the money of his kingdom, was one of the most imprudent, dishonorable, and pernicious measures of his reign: it was productive of innumerable inconveniences and great perplexity in business of all kinds; and the restoration of it to its standard purity was found to be a work of great difficulty,' Henry's History of Great Britain, vol. xii. p. 336, 337. It is worthy of observation, that since that period, we have had no such capricious and nefarious attempts; and the regulations of the royal British Mint may now be quoted as at once most scientific and effective.

The art, to which this paper is devoted, consists of two distinct branches or operations, the separation of alloy, or base metals, from the precious ores, accomplished by what is technically called cupellation; and the separation of the precious metals, gold, platina, and silver from each other, called quartation and parting.

The separation of gold, silver, and platina, from baser metals, is conducted by exposing the whole metallic mass, in which they are supposed to be contained, mixed with a certain portion of lead, to a strong heat, in a shallow crucible, made of burned bones, called a cupel; which is placed in a muffle or small earthen oven, fixed in the midst of a furnace. The lead now vitrifies, or becomes converted into a glassy calx, which dissolves the imperfect metals: and this calx, with those metals which it absorbs, soaks into the cupel, and leaves the precious metals in a state of purity. 'In proportion to the violence of the heat,' says Dr. Aikin, 'is the density of the fume, the violence with which it is given off, the convexity of the surface of the globule of melted matter, and the rapidity with which the vitrified oxide circulates (as it is termed), or falls down the sides of the metal. As the cupellation advances, the melted button becomes rounder, its surface becomes streaky with large bright points of the fused oxide, which moves with increased rapidity, till at last the globule, being now freed from all the lead and other alloy, suddenly lightens; the last portions of litharge on the surface disappear with great rapidity; showing the melted metal bright with irridescent colors, which directly after becomes opaque, and suddenly appears brilliant, clean, and white, as if a curtain had been withdrawn from it. The operation being now finished, and the silver left pure, the cupel is allowed to cool gradually, till the globule of silver is fixed, after which it is taken out of the cupel while still hot, and when cold weighed with as much accuracy as at first. The difference between the globule and the silver at first put in, shows the quantity of alloy, the globule being now perfectly pure silver, if the operation has been well performed. The reason of cooling the globule or button gradually is, that pure silver, when congealing, assumes a crystalline texture, and if the outer surface is too suddenly fixed, it forcibly contracts on the still fluid part in the centre, causing it to spurt out in arborescent shoots, by which some minute portions are often thrown out of the cupel, and the assay spoiled.'

The assay of gold and silver is alike, it will be observed, throughout the process of cupellation. As lead is the medium required for the absorption of other metals, both the quality and quantity of that metal employed become important to ascertain. If it contains much silver, it will be easy to perceive a source of material error in the operations of the assayer. Lead revived from litharge contains only about half a grain in the pound weight, and is therefore preferred to lead immediately revived from the ore, which usually contains a larger quantity.

As to the proper quantity of lead, it is desirable at first to ascertain the comparative state of purity of the ingot to be assayed. In this country, such a judgment is generally formed from inspection of the color, hardness, tenacity, &c. of the metal, but formerly touch-needles were employed for this purpose. These, which are not entirely in disuse, consist of small bars of differently proportioned alloys, of known composition. If a streak is made with the ingot upon the surface of black flint, or basalt, a species of indurated slate, called by the ancients *βάσανος*, and still known by the name of basanite, or even upon a fragment of black pottery, by comparing the streaks with those made on the same stone from needles of known composition, the relative purity of the ingot may be inferred. 'Copper' says Dr. Aikin, 'the usual alloy of the fine metals, when taken singly, is found to require from ten to fourteen times its weight of lead for complete scorification on the cupel. Now, all admixtures of fine metal tend to protect the copper from the action of the litharge and the more obstinately, the greater the proportion of fine metal. So that copper, with three times its weight of silver (or 9 oz. fine), requires forty times as much lead as copper; with eleven parts of silver it requires seventy-two parts of lead, and the like in an increasing ratio. The following is the table of the proportions of lead required to different alloys of copper; of which a few points are founded on the above-mentioned experiments, and the rest filled up according to the estimated ratio of increase, being multiples of the assay integer 24 in arithmetical progression. In the three first columns is shown the absolute increase of the quantity of lead in alloys of decreasing fineness; in the three last columns will be seen the gradual diminution of the protecting power of fine metal against scorification, in proportion to the increase of alloy, shown by the decreasing quantity of lead required for the same weight of copper, under different mixtures.'

TABLE.

Silver		Copper		Lead	Ratio of increase		Copper		Silver		Lead	
23	with	1	requires	96	= 4 × 24	and hence	1	with	23	requires	96	
22	——	2	——	144	= 6 × 24	——	1	——	11	——	72	
20	——	4	——	192	= 8 × 24	——	1	——	5	——	48	
18	——	6	——	240	= 10 × 24	——	1	——	3	——	40	
16	——	8	——	288	= 12 × 24	——	1	——	2	——	36	
14	——	10	——	336	= 14 × 24	——	1	——	$1\frac{2}{5}$	——	33	
12	——	12	——	384	= 16 × 24	——	1	——	1	——	32	
10	——	14	——	432	= 18 × 24	——	1	——	$\frac{5}{7}$	——	30	+
8	——	16	——	480	= 20 × 24	——	1	——	$\frac{1}{2}$	——	30	
6	——	18	——	528	= 22 × 24	——	1	——	$\frac{1}{2}$	——	29	+
4	——	20	——	576	= 24 × 24	——	1	——	$\frac{1}{5}$	——	28	+
2	——	22	——	624	= 26 × 24	——	1	——	$\frac{1}{11}$	——	28	+

It should be remarked, however, that many assayers of good authority use proportions of lead considerably different from the above table; and the whole of the numbers here given may be considered as rather high, in regard to the quantity of lead. The assaying of gold, if that noble metal contained copper as an alloy, would be as simple and expeditious as that of silver; but all gold contains a portion of silver, which cannot be destroyed by cupellation: it may also contain platina; but this is not commonly found.

After it has passed the cupel, quartation and parting become necessary. The former consists in adding (generally) three parts of silver to the mass of supposed gold, and fusing them together. It is an object of importance to prevent the cornets from being broken, the result being less likely to be accurate when the gold is in fragments; and to prevent this, the quantity of silver used is no more than is absolutely necessary, it being found that the less the quantity of gold, compared to the silver, used in the assay, the more likely is the gold to be broken into pieces. 'Suppose, for example,' says Mr. Mushet, 'that a gold assay is made from the ingot, or pound, weighing twelve grains Troy, an addition of from twenty-four to thirty-six grains of pure silver is made in addition to the small portion already supposed to exist in the mass. This becomes thoroughly incorporated with the gold in the process of cupellation. The globule, or button, as soon as it is taken from the furnace, is passed between a pair of polished steel rollers, and drawn out into a thin lamina, or plate, of the thickness of a sixpence, and returned into the furnace to be annealed. After being kept in a red heat for some time, it is taken out and suffered to cool. It is then wound up into a cornet. This is put into a glass matrass, of the shape of an inverted cone, and with about twice or thrice its weight of very pure nitric acid. M. Vauquelin recommends it to be 1·25 specific gravity.'

The hot acid being very carefully poured from the matrass, warm water is added to wash any remains of silver from the gold, and the addition repeated until the water comes off perfectly clear. The cornets of gold, which are of a dull brown color, are then put according to their numbers into small clay crucibles, into which they are allowed gently to fall by inverting the matrass, with a portion of water in it, which breaks their fall, and also collects any grains of gold that may be in the matrass. The water is then poured off, and they are put into the furnace, and annealed under a bright cherry heat. When cooled, the pieces of gold exhibit their beautiful characteristic lustre, and possess all the softness and flexibility of that metal. The weight of the original metallic mass before cupellation and in the subsequent stages, compared with the final weight now ascertained, indicates the degree of fineness of the ingot, or ore, of which it is a part. In estimating or expressing this fineness in regard to gold, the whole mass spoken of is supposed to weigh twenty-four carats of twelve grains each, either real, or merely proportional, like the assayer's weights; and the pure gold is called fine. Thus, if gold be said to be twenty-three carats fine, it is to be understood, that in a mass weighing twenty-four carats, the quantity of pure gold amounts to twenty-three carats.

The assay report of gold, says the official gentleman we have quoted above, is made according as it is better or worse than standard. The standard of our gold coin is twenty-two carats fine, and two carats alloy. If, by assay, an ingot of gold was found to contain twenty-one carats of fine gold, it would be reported worse one carat, the mass containing a carat of alloy more than the proportion of two carats to twenty-two carats fine. If the ingot weighed fifteen pounds Troy, there would be deducted from the gross weight one carat, or 240 grains Troy, reducing the standard of the mass to 14 lbs. 11 ozs. 10 dwts. If, on the contrary, the mass was found to contain twenty-three carats fine gold, it would be reported one carat better than standard; and this carat would be added to the gross weight of the ingot, which we have supposed to weigh fifteen pounds Troy, and would be called 15 lbs. 0 oz. 10 dwts. of standard gold. When the gold assay pound or integer is only twelve grains, the quarter assay grain weighs only $\frac{1}{96}$ part of a Troy grain. This will show how delicate the scales must be by which the assayer works in order to obtain accuracy. In the royal mint the scales of the assayers will be sensibly affected even with the $\frac{1}{1000}$th part of a Troy grain. When the emperor of Russia lately visited the mint, he was particularly struck with the extreme delicacy of the assay scales of Mr. Bingley, the king's assay-master. That gentleman requested the favor of his imperial majesty to put one of the hairs of his head into the scale, which he did, and, to the great satisfaction of his majesty, it very sensibly affected the equilibrium of the beam.'

It is necessary to be careful that the silver used in this last process should contain no gold, otherwise a source of material error would arise in the operation; and, as silver generally contains a small portion of gold, the best assayers use that which is revived from a precipitation of the nitrate of silver. This nitrate of silver is precipitated by immersing in it plates of copper: it may also be recovered by a solution of common salt, which converts the silver into luna cornea, of which, when washed and well dried, 100 parts contain seventy-five of silver. The accuracy of the assay may also be proved by this process. The luna cornea, however, is more difficult to reduce to the metallic state.

Many dealers in bullion (the bank of England we believe uniformly) refuse to purchase any foreign gold bullion, until it has been remelted by refiners or melters on whose integrity they can rely.

Platina, on account of its great value, is not likely to be used in debasing silver; but it may be fraudulently added to gold. Like gold and silver, it resists the action of lead upon the cupel; but an expert assayer will recognise its presence by the very different appearance which it gives to the button of metal in fusion. This is less perfect; a much greater heat is required; and the color less bright; and, in a very small proportion, it gives to the gold a strong tendency to crystallisation. Nothing is required for its separation but to proceed exactly as in a gold assay; and, by reducing the lamina of metal very thin, to form the cornet, the platina, though alone insoluble in nitric acid, may, with the silver, be totally removed from the gold.

Some idea of the delicacy required through the whole of the foregoing operations may be formed from an authentic statement, that in our national mint an assay of twenty grains is relied on for giving the value of a mass of gold of fifteen pounds, or of silver of sixty pounds in weight.

The Annales de Chimie, vol. vi. p. 64, contain some very interesting details of recent attempts of the French government to establish an accurate assay of gold. The general result is as follows, nearly in the terms of the experimenters:—

Six principal circumstances appear to affect the operation of parting: namely, the quantity of acid used in parting, or in the first boiling; the concentration of this acid; the time employed in its application; the quantity of acid made use of in the reprise, or second operation; its concentration; and the time during which it is applied. From the experiments it has been shown, that each of these unfavorable circumstances might easily occasion a loss of from the half of a thirty-second part of a carat, to two thirty-second parts. The writers explain their technical language by observing, that, the whole mass consisting of twenty-four carats, this thirty second part denotes 1-768th part of the mass. It may easily be conceived, therefore, that if the whole six circumstances were to exist, and be productive of errors falling the same way, the loss would be very considerable.

It is indispensably necessary, therefore, that one uniform process should be followed in the assays of gold; and it is a matter of astonishment, that such an accurate process should not have been prescribed by government for assayers in an operation of such great commercial importance, instead of every one being left to follow his own judgment. The process recommended in the report before us is as follows:—

Twelve grains of the gold intended to be assayed must be mixed with thirty grains of fine silver, and cupelled with 108 grains of lead. The cupellation must be carefully attended to, and all the imperfect buttons rejected. When the cupellation is ended, the button must be reduced by lamination into a plate of one inch and a half, or rather more, in length, and four or five limes in breadth. This must be rolled up upon a quill, and placed in a matrass capable of holding about three ounces of liquid, when filled up to its narrow part. Two ounces and a half of very pure aqua-fortis, of the strength of twenty degrees of Baume's areometer, must then be poured upon it; and the matrass being placed upon hot ashes, or sand, the acid must be kept gently boiling for a quarter of an hour; the acid must then be cautiously decanted, and an additional quantity of one ounce and a half must be poured on the metal, and slightly boiled for twelve minutes. This being likewise carefully decanted, the small spiral piece of metal must be washed with filtered river water, or distilled water, by filling the matrass with this fluid. The vessel is then to be reversed, by applying the extremity of its neck against the bottom of a crucible of fine earth, the internal surface of which is very smooth. The annealing must then be made, after having separated the portion of water which had fallen into the crucible; and, lastly, the annealed gold must be weighed. For the certainty of this operation, two assays must be made in the same manner, together with a third assay upon gold of twenty-four carats, or upon gold the fineness of which is perfectly and generally known.

No conclusion must be drawn from this assay, unless the latter gold should prove to be of the fineness of twenty-four carats exactly, or of its known degree of fineness; for, if there be either loss or surplus, it may be inferred, that the other two assays, having undergone the same operation, must be subject to the same error. The operation being made according to this process, by several assayers, in circumstances of importance, such as those which relate to large fabrications, the fineness of the gold must not be depended on, nor considered as accurately known, unless all the assayers have obtained a uniform result without communication with each other. The authors observe, however, that this identity must be considered as existing to the accuracy of half of the thirty-second part of a carat. For notwithstanding every possible precaution or uniformity, it very seldom happens that an absolute agreement is obtained between the different assays of one and the same ingot; because the ingot itself may differ in its fineness in different parts of its mass.

The assaying of silver does not differ from that of gold, excepting that the parting operation is not necessary. A certain small portion of the silver is absorbed by the cupel and the more when a larger quantity of lead is used, unless the quantity of lead be excessive; in which case most of it will be scorified before it begins to act upon the silver. Messrs. Hellot, Tillet, and Macquer, from their experiments made by order of the French government, have ascertained, that four parts of lead are requisite for silver of eleven pennyweights twelve grains fine, or containing this weight of pure silver, and twelve grains of alloy, in twelve pennyweights; six parts of lead for silver of eleven pennyweights; eight parts lead for silver of ten pennyweights; ten parts lead for silver of nine pennyweights: and so on in the same progression. The following is the assay table of M. D'Arcet:

Titles of the Silver.	Quantities of copper in the alloy.	Doses of lead necessary, the weight of silver being 1.	Relation between the lead and copper.
Silver at 1000	0	3-10ths.	
950	50	3	70 to 1
900	100	7	60—1
800	200	10	50—1
700	300	12	40—1
600	400	14	35—1
500	500	from 16 to 17	32—1
400	600	16—17	26·66—1
300	700	16—17	22·857—1
200	800	16—17	20—1
100	900	16—17	17·77—1
Pure copper,	1000	16—17	16—1

This table supposes, that the title of the silver to be assayed is known; but when it is not, it may be determined approximately, by exposing in the cupel 0·1 part of this silver with 1 of lead. French gold and silver coin contains 1-10th of copper united to the precious metal. British silver coin consists of 12¼ silver and 1 copper; our gold coin contains 11-12ths of gold. The remainder is either copper, or a mixture of silver and copper.

In our plate entitled ASSAYING we give the assay furnace and its instruments, as used at the Royal Mint, and Goldsmith's Hall, London.

Fig. 1. AAAA is a front elevation of the assay furnace; *a a* one of two iron rollers on which the furnace rests; *b* the ash-pit; *c c* the ash-pit dampers, moving in a horizontal direction towards each other, for regulating the draught of the furnace; *d* the door, or opening by which the cupels are introduced into the muffle; *e* a moveable funnel or chimney, by which the draught of the furnace is increased.

BBBB, Fig. 2, is a perpendicular section of fig. 1; *a a* ends of the rollers; *b* the ash-pit; *c* one of the ash-pit dampers; *d* the grate; *e* the plate upon which the muffle rests, and which is covered with loam nearly one inch thick; *f* a section of the mufflle representing the situation of the cupels; *g* the mouth-plate, and upon it are laid pieces of charcoal, which during the process are ignited, and heat the air that is to pass over the surface of the cupels; *h* the interior of the furnace, exhibiting the fuel.

The total height of the furnace is two feet six inches and a half; from the bottom to the grate six inches; the grate, muffle, plate, and bed of loam with which it is covered three inches; from the upper surface of the grate to the commencement of the funnel, *e*, is six inches. The square of the furnace which receives the muffle and fuel is eleven inches and three-quarters by fifteen inches. The external sides of the furnace are made of plates of wrought iron, and are lined with a two-inch fire brick.

Fig. 3 is the muffle, a sort of small oven, made of crucible clay, and open at one end. On the floor of the muffle the cupels are ranged in order, so that by a corresponding board as a register, the position of each may be preserved with reference to their respective contents. At the sides of the muffle are three or four slits to allow of the circulation of the air, which is essential to the process. It is usual to spread over the floor of the muffle a thin layer of sand, or powdered chalk, to prevent the fused oxide of lead which may penetrate the cupel, from cementing it to the bottom of the muffle.

Fig. 4 is the muffle plate on which it rests in the furnace.

Fig. 5 is the door seen at *d* in fig. 1, with *n* its sliding mouth-plate.

Fig. 6 represents the mode of closing the mouth of the furnace with cylinders of charcoal, which being ignited, heat the air, before it arrives at the surface of the metal in the cupels.

Fig. 7 two cupels; they are made of bones calcined and reduced to a moderately fine powder, which is mixed up with water so as to form a paste. The shape is produced by ramming this paste into truncated conical moulds, a cavity is then formed at the upper surface of each by means of a round ended pestle or rammer. The cupel is disengaged from the mould, and suffered to become thoroughly dry in the open air before it can be made use of for an assay. The core of ox horns is considered the best substance for producing the phosphate of lime for cupels. Those commonly employed in the mint are one inch in diameter by seven-eighths in depth.

Fig. 8 the teaser for cleaning the grate.

Fig. 9 a larger teaser, which is introduced at the top of the furnace, for keeping a complete supply of charcoal around the muffle.

Fig. 10 the tongs used for charging the assays into the cupels.

Fig. 11 represents a board of wood used as a register, and is divided into forty-five equal compartments, upon which the assays are placed previous to their being introduced into the furnace. When the operation is performed, the cupels are placed in the furnace in situations corresponding to these assays on the board; by these means all confusion is avoided, and without this regularity, it would be impossible to preserve the accuracy which the delicate operation of the assayer requires.

Assay-Master, an officer, under certain corporations, entrusted with the care of making true touch, or assay, of gold and silver; and giving a just report of the goodness or badness thereof. Such is the assay-master of the mint in the Tower, called also assayer of the king.

The assay-master of the goldsmith's company is an assistant-warden, called also a touch-warden, appointed to survey, assay, and mark all the silver-work, &c. committed to him. There are also assay-masters, appointed by statute, at York, Exeter, Bristol, Chester, Norwich, Newcastle, and Birmingham, for assaying wrought plate. The assay-master is to retain eight grains of every pound Troy of silver brought to him; four whereof are to be put in the pix, or box of deal, to be re-assayed the next year; and the other four to be allowed him for his waste and spillings. 12 and 13 Will. III. c. 4. 1 Ann. c. 9.

Note. The number of pennyweights set down in the assay-master's report, is to be accounted as per pound, or so much in every pound of twelve ounces Troy. For every twenty pennyweights, or ounce Troy, the silver is found by the assay to be worse than standard, or sterling, sixpence is to be deducted; because every ounce will cost so much to reduce it to standard goodness, or to change it for sterling. In gold, for every carat it is set down to be worse than standard, you are to account that in the ounce Troy it is worse by so many times 3*s.* 8*d.* And for every grain it is set down worse, you must account it worse by so many times 11*d.* in the ounce Troy. And for every half grain, 5½*d.*; for so much it will cost to make it of standard goodness, &c.

Assay-Balance, a balance used in the operation of assaying. See Balance.

Assay of Weights and Measures, often signifies the trial or examination of common weights and measures by the clerk of a market.

ASSECU'RE,
Assecu'rance,
Assecura'tion.
} Barbarous Lat. *assecurare*, Lat. *securus*, to give assurance.

Can never mischief end as it begun;
But being once out, must farther out of force?
Think you that any means under the sun
Can *assecure* so indirect a course?

Daniel. Civil War. bk. iii. p. 473.

But how far then reaches this *assecuration?* So far as to exclude all fears, all doubting and hesitation? Neither of these. *Bishop Hall's Sermons.*

ASSECUTION. Lat. *assequor*, *assecutus*, from *ad* and *sequor*, the act of following up, obtaining.

By the canon law, a person after he has been in full possession of a second benefice, cannot return to his first, because it is immediately void by his *assecution* of a second. *Ayliffe's Parergon.*

ASSELYN (John), a famous Dutch painter, the disciple of Isaiah Vandevelde. He distinguished himself in historical pieces, battles, landscapes, with ruins and animals, particularly horses. He travelled into France and Italy; and was much pleased with the manner of Bamboccio, which he always followed, except in the
painting landscapes, in which Claude L
was his model. Twenty-four of his lan
have been engraved by Perelle, and sold
prices. He died at Amsterdam in 1660.

ASSEMANI, I. S. and S. E. two
librarians of the Vatican, in the seventeen
eighteenth centuries. Joseph Simon wa
at Rome 1687, and died 1768. He wrot
liotheca Orientalis Clementino Vaticana,
1719-28, 4 vols. folio, affording ample pro
learning in the numerous notices it contain
riac, Arabic, and Persian manuscripts, wi
of their authors. S. Ephræm, Syri, Opera
quæ extant, Græce, Syriace, et Latine,
1732-34, 6 vols. folio; Italicæ Historiæ Sc
ex Bibl. Vat., Romæ, 1751-53, 4 vols. 4t
lendaria Ecclesiæ Universæ, &c. Romæ
57, 6 vols. 4to. Assemani, S. E. nephew
foregoing, wrote Bibliothecæ Mediceo I
tinæ et Palatinæ Codd. MSS. Orientaliun
logus, Florentiæ, 1742, 2 vols. folio; Act
torum Martyrum Oriental et Occidental,
1748, 2 vols. folio.

ASSEM'BLANCE. Fr. *sembler*, a li
See Semblance.

Falst. Will you tell me, Master Shallow,
chuse a man? Care I for the limbe, the the
stature, bulke, and bigge *assemblance* of a man
me the spirit, Master Shallow.

Shakspeare. Henry IV

ASSEMBLE, *v.* & *n.*
Assem'blage,
Assem'blance,
Assem'bler,
Assem'bling,
Assem'bly.
} Fr. *assemble*
the Latin *ad*,
simul, togethe
bring together
one place; to
to convene.

A rout of people there *assembled* were,
Of every sort and nation under sky,
Which, with great uproar, pressed to draw ne
To the upper part, where was advanced high
A stately seat of sovereign majesty.

Mahomet made the people believe that h
call a hill to him; and from the top of it
his prayers for the observers of his law. The
assembled; Mahomet called the hill to come
again and again; and, when the hill stood
was never a whit abashed, but said; ' If the
not come to Mahomet, Mahomet will go to th

Lord Bacon's

These men *assembled*, and found Daniel pra

And he shall set up an ensign for the natio
shall *assemble* the outcasts of Israel, and gath
ther the dispersed of Judah. *Isaiah*

He wonders for what end you have *assem*
Such troops of citizens to come to him.

Sha

Assemble all in choirs, and with their no
Salute and welcome up the rising sun.

O Hartford (fitted, or to shine in courts
With unaffected grace, or walk the plains,
With innocence and meditation join'd
In soft *assemblage*) listen to my song! *T*

The Assembly of Divines at Westm
was an association of ministers and other
moned by ordinance of parliament, in th
1643, to meet at Westminster, ' for settl
government and liturgy of the church of
land, and for vindicating and clearing t
church from false aspersions and interpret

It also met expressly according to the words of the covenant, 'for the extirpation of prelacie, that is church-government by arch-bishops, bishops, their chancellors, and commissaries, deans and chapters, archdeacons and all other ecclesiastical officers.' This assembly consisted of 121 divines and thirty laymen, 'celebrated ' in their party,' says Mr. Hume, 'for piety and learning.' The leading parties were the Presbyterians, Erastians, and Independents. The works of the assembly, besides some letters to foreign churches, and occasional admonitions were, 1. Their humble Advice to Parliament, for Ordination of Ministers, and settling the Presbyterian Government. 2. A Directory for Public Worship. 3. A Confession of Faith. 4. A larger and a shorter Catechism. 5. A Review of some of the Thirty-nine Articles. Both the larger and shorter Assembly's catechism, are largely in use at the present time among the English Calvinistic dissenters.

ASSEMBLIES of the clergy are otherwise called convocations, synods, councils. The annual meeting of the church of Scotland is called the General Assembly; in which his Majesty is represented by his commissioner, generally a Scottish nobleman, but who has no voice in the deliberations: his duty being confined to the calling and dissolution of the meeting, which he does in the name of his Majesty, whilst the Moderator does the same in the name of the Lord Jesus Christ. This assembly possesses the highest authority in the church of Scotland; a presbytery, composed of fewer than twelve parishes, sends two ministers and one ruling elder to the assembly; if it contains between twelve and eighteen ministers, it sends three of these, and one ruling elder; if it contains between eighteen and twenty-four ministers, it sends four ministers and two ruling elders; and of twenty-four ministers, it sends five with two ruling elders. Every royal borough deputes one ruling elder, and Edinburgh two; their election must be attested by the kirk-session of their respective boroughs. Every university sends one commissioner from its own body. The commissioners are chosen annually six weeks before the meeting of the assembly; and the ruling elders are often men of the first eminence for rank and talents.

ASSEMBLIES of the Roman people were called comitia.

ASSEMBLIES OF THE STATES. Under the Gothic governments, the supreme legislative power was lodged in an assembly of the states of the kingdom held annually for the like purposes as our parliaments. There were some feeble remains of them in France and Poland before the late revolutions and counter-revolutions.

ASSEMBLY, in the military art, the second beating of a drum before a march; at which the soldiers strike their tents, roll them up, and stand to arms. See DRUM.

ASSENS, a bailiwic and town of Denmark, on the west coast of the island of Funen, which carries on a considerable trade in corn. It is also called Asnes, which signifies the holy promontory. A battle was fought in it, in 1536, wherein Christian III. obtained a decisive victory over Christian II. Here is a ferry across the little Belt to Holstein. Long. 9° 54′ E., lat. 55° 20′ N.

ASSENT′, *v.* & *n.*
ASSENTA′TION,
ASSENTA′TOR,
ASSENT′ER,
ASSENT′MENT.
Lat. *assentior*, from *ad*, and *sentio*, to think to, to be of the same opinion. To agree to what is proposed, to bring one's mind to a thing, to comply. Assentation is synonymous with flattery; obsequiousness.

And the Jews also *assented*, saying that these things were so. *Acts* xxiv. 9.

Their arguments are but precarious, and subsist upon the charity of our *assentments*. *Brown's Vulgar Errors.*

To urge any thing upon the church; requiring thereunto that religious *assent* of Christian belief, wherewith the words of the holy prophets are received, and not to show it in scripture; this did the Fathers evermore think unlawful, impious, and execrable. *Hooker.*

The evidence of God's own testimony, added unto the natural *assent* of reason concerning the certainty of them, doth not a little comfort and confirm the same. *Id.*

Without the king's *assent* or knowledge,
You wrought to be a legate. *Shakspeare.*

Faith is the *assent* to any proposition, not thus made out by the deduction of reason, but upon the credit of the proposer. *Locke.*

All the arguments on both sides must be laid in balance; and, upon the whole, the understanding determine its *assent*. *Id.*

Man is the world's high-priest, he doth present
The sacrifice for all, while they below,
Unto the service mutter an *assent*,
Such as springs use, that fall, and winds that blow.
Herbert.

One would think that hell should have little need of the fawning *assentation* of others, when men carry so dangerous parasites in their own bosoms; but sure, both together must needs help to people that region of darkness. *Bishop Hall's Soliloquies.*

He ceased; th' assembled warriors all *assent*,
All but Atrides. *Cumberland.*

Precept gains only the cold approbation of reason, and compels an *assent* which judgment frequently yields with reluctance, even when delay is impossible. *Hawkesworth.*

The ROYAL ASSENT is the approbation given by the king in parliament, to a bill which has passed both houses, after which it becomes a law.

The royal assent may be given in two ways. 1. In person; when the king comes to the house of peers, in his crown and royal robes, and sending for the commons to the bar, the titles of all the bills that have passed both houses are read; and the king's answer is declared by the clerk of the parliament in Norman-French. If the king consents to a public bill, the clerk usually declares, 'le roy le veut; the king wills it so to be;' if to a private bill, 'soit fait comme il est desirè; be it as it is desired.' If the king refuses his assent, it is in the gentle language of 'le roy s'avisera; the king will advise upon it.' When a money-bill, or bill of supply, is passed, it is carried up and presented to the king by the speaker of the house of commons; and the royal assent is thus expressed 'le roy remercie ses loyal sujets, accepte leur benevolence, et aussi le veut;

the king thanks his loyal subjects, accepts their benevolence, and wills it so to be.'

In case of an act of grace, which originally proceeds from the crown, and has the royal assent in the first stage of it, the clerk of the parliament thus pronounces the gratitude of the subject; 'les prelats, seigneurs, et commons, en ce present parlement assemblées, au nom de touts vous autres sujets, remercient tres humblement votre majeste, et prient a Dieu vous donner en sante bone vie et longue; the prelates, lords, and commons, in this present parliament assembled, in the name of all your other subjects, most humbly thank your majesty, and pray to God to grant you health and wealth long to live.'

2. By the statute 33 Hen. VIII. c. 21., the king may give his assent, by letters patent, under his great seal, signed with his hand, and notified in his absence to both houses, assembled together in the high house. And when the bill has received the royal assent in either of these ways it is then, and not before, a statute or act of parliament: a copy of which is usuallyprinted at the king's press, for the information of the whole land. See Blackst. Com. book i. chap. 2.

ASSER, or **Asce**, a Jewish rabbi of the fifth century, who, with other learned rabbins, compiled the collection of Hebrew traditions called the Babylonian Talmud. This was printed at Leyden, 1630, in 4to.; but the most complete edition is one published in 1744, at Amsterdam, twelve volumes folio, with an ample commentary. Asser died in 427, aged seventy-four.

Asser (John), or Asserius Menevensis, (i. e. Asser of St. David's), bishop of Sherborne in the reign of Alfred the Great. He was born in Pembrokeshire, South Wales; and educated in the monastery of St. David's. By his assiduous application he soon acquired universal fame as a person of profound learning and great abilities. Alfred the munificent patron of genius, about the year 880, sent for him to his court, then held at Dean in Wiltshire. He was so charmed with Asser, that he made him his preceptor and companion; appointed him abbot of two or three different monasteries; and at last promoted him to the see of Sherborne, where he died in 910. He is said to have been principally instrumental in persuading the king to restore the university of Oxford to its pristine dignity; and wrote De Vitâ et Rebus Gestis Alfredi, &c. Lond. 1574, published by archbishop Parker, in the old Saxon character, at the end of Walsinghami Hist.—Francf. 1602, fol. Oxf. 1722, 8vo. Many other works are ascribed to this author by Gale, Bale, &c. but on very doubtful authority.

ASSERIA, **Assesia**, or **Asisia**, an ancient town of Liburnia, now in ruins. Pliny, having specified the Liburnian cities that were obliged to attend the congress of Scardonia, adds to the catalogue the free Asserians, immunesque Asseriates; a people who created their own magistrates, and were governed by their own municipal laws.

ASSERIDA, in botany, a name given by the people of Guinea to a kind of shrub, the leaves of which being chewed, are a cure for the colic.

ASSERT',
Asserta'cion,
Asser'tion,
Asser'tive,
Asser'tively,
Asser'tor,
Asser'tory.

Assero, assertum, t
to, to sew to. To ab
to bear the conseque
an opinion, to hold, to
tain, to affirm.

That tongue
Inspir'd with contradiction, durst oppose
A third part of the gods, in synod met,
Their deities to *assert*.

Among th' *asserters* of free reason's claim,
Our nation's not the least, in worth or fame,
The world to Bacon does not ŏnly owe
It's present knowledge, and its future too.
Dryden's

Faithful *assertor* of thy country's cause,
Britain with tears shall bathe thy glorious wo

It is an usual piece of art to undermine th
rity of fundamental truths, by pretending t
how weak the proofs are which their *assertors*
in defence of them. *A*

He was not so fond of the principles he un
to illustrate, as to boast their certainty; p
them, not in a confident and *assertive* form, bu
babilities and hypotheses. *G*

The Epicureans contented themselves with
nial of a Providence, *asserting* at the same t
existence of gods in general, because they w
shock the common belief of mankind.

We, as it were, lean forward with surpr
trembling, to behold the human soul colle
strength, and *asserting* a right to superior fate

When the great soul buoys up to this hig
Leaving gross nature's sediments below,
Then, and then only, Adam's offspring quit
The sage and hero of the fields and woods,
Asserts his rank and rises into man.

It is an erect countenance; it is a firm ad
to principle; it is a power of resisting fals
and frivolous fear, that *assert* our good faith
nour, and assure us of the confidence of mank

Sophocles also, in a fragment of one of hi
dies, *asserts* the unity of the supreme being.
Cam

But, lo! from high Hymettus to the plain,
The queen of night *asserts* her silent reign.
Lord Byron's

ASSESS', *v.* & *n.*
Asses'sionary,
Asses'sment,
Asses'sor.

Ital. *assessare*, to
impose a tax.
done by a sitting o
cil, and agreement

authorised to impose it. Assessor is a l
viser to a magistrate, sitting by him
bench.

To his Son,
Th' *assessor* of his throne, he thus began.

Twice stronger than his sire, who sat abo
Assessor to the throne of thund'ring Jove.

Minos, the strict inquisitor, appears;
And lives and crimes, with his *assessors*, he
Round, in his urn, the blended balls he ro
Absolves the just, and dooms the guilty so

What greater immunity and happiness c
be to a people, than to be liable to no laws,
they make themselves? To be subject to n
bution, *assessment*, or any pecuniary levy wh
but what they vote, and voluntarily yield un
selves.

of the answers of the jury, upon their oaths, at
court, I have inserted.
Carew's Survey of Cornwall.

Pausanias sat the judge;
Callicrates and Aemnestus wise,
His two *assessors*. *Glover's Athenaid.*

TS, in law, are either real or personal.
man hath lands in fee simple, and dies
hereof, the lands which come to his heir
real; and where he dies possessed of
onal estate, the goods which come to the
are assets personal. Assets are also
into assets per descent, and assets inter

ts by Descent are where a person is
an obligation, and dies seized of lands
scend to the heir, the land shall be
the heir shall be charged as far as the
im descended will extend.
ts inter Maines are when a man in-
akes executors, and leaves them suffi-
pay his debts and legacies; or where
mmodity or profit ariseth to them in
he testator, which are called assets in
ds. This term is also applied com-
to any available property for the pay-
man's debts.

ER, } Lat. *assevero*; *ad*, and *se-*
ation. } *verus*. To say or affirm se-
solemnly; to assure; to maintain

You must, you will, and smile upon my
rder.
stier. Therefore, if you are conscious of
reach,
me: lead me to the king,
mis'd me to conquer his revenge,
you next him; therefore, if you're right,
fear it by *asseverations*,
your heart, and O resolve me truly.
Dryden. Duke of Guise.

some and some of you shall see me
Can it be supposed that in such an *asse-*
word to 'come' may bear two different
Horsley's Sermons.

EANS, or Chasidæans; from the Heb.
chasidim, merciful, pious; those Jews
ted to Mattathias to fight for the law of
the liberties of their country. They
of great valor and zeal, having volun-
oted themselves to a more strict obser-
the law than other men. For after the
the Jews from the Babylonish captivity,
e two sorts of men in their church;
contented themselves with that obe-
ly which was prescribed by the law of
nd who were called Zadikim, i. e. the
; and those who, over and above the
radded the constitutions and traditions
ders, and other rigorous observances:
er were called Chasidim, i. e. the pious.
former sprung the Samaritans, Saddu-
Caraites; from the latter, the Pharisees
ssenes.

ENT signs, in medicine, are symptoms
ually attend a disease but not always;
fering from pathognomic signs, which
arable from the disease: e. g. in the
a pungent pain in the side; in an acute
ficulty of breathing, &c collectively taken, are pathognomic signs; but that the pain extends to the hypochondrium or clavicle, or that the patient lies with more ease on one side than on the other, are assident signs.

ASSID'UATE, Assid'uity, Assid'uous, Assid'uously. } Lat. *assideo*, to sit down at any thing constantly or daily. Constant in application, unwearied, diligent, sedulous.

And if by pray'r
Incessant I could hope to change the will
Of him who all things can, I would not cease
To weary him with my *assiduous* cries. *Milton.*

The most *assiduous* tale-bearers, and bitterest revilers, are often half-witted people.
Government of the Tongue.

In summer, you see the hen giving herself greater freedoms, and quitting her care for above two hours together; but in winter, when the rigour of the season would chill the principles of life, and destroy the young one, she grows more *assiduous* in her attendance, and stays away but half the time.
Addison.

Each still renews her little labour,
Nor justles her *assiduous* neighbour. *Prior.*

We observe the address and *assiduity* they will use to corrupt us. *Rogers.*

The habitable earth may have been perpetually the drier, seeing it is *assiduously* drained and exhausted by the seas. *Bentley.*

A scholar is industrious, who doth *assiduously* bend his mind to study for getting knowledge.
Barrow's Sermons.

Often as she mounts
Or quits the car, his arm her weight sustains
With trembling pleasure. His *assiduous* hand
From purest fountains wafts the living flood.
Glover. Leonidas, book viii. p. 57.

ASSIDUI, in Roman antiquity, volunteers who served in the army at their own expense.

ASSIDUUS, or Adsiduus, from *as*, money, among the Romans, denoted a rich or wealthy person. Hence we meet with assiduous sureties, assidui fide-jussores. When Servius Tullius divided the Roman people into five classes, according as they were assessed, the richer sort who contributed *asses* were denominated assidui; and as these were the chief people of business who attended all the public concerns, those who were diligent in attendances came to be denominated assidui.

ASSIEGE'. Fr. *assieger*, to sit down before. To sit down before a town, to besiege.

Swiche wondring was ther on this hors of brass,
That sin the gret *assege* of Troye was,
Ther as men wondred on an hors also,
Ne was ther swiche a wondring, as was tho.
Chaucer. The Squier's Tale, vol. i. p. 431.

On th' other side th' *assieged* castles ward
Their stedfast arms did mightily maintain.
Spenser.

I leave what glory virtue did attain,
At th'ever memorable Agincourt.
I leave to tell, what wit, what pow'r did gain
The *assieg'd* Roan, Caen, Dreux; or in what sort.
Daniel. Civil War, book v.

ASSIENTO, Span. a contract. The first of this kind was made by the French Guinea Company; and, by the treaty of Utrecht, transferred to the English, who were to furnish 4800 negroes to Spanish America annually.

ASSIGN', *v.* & *n.*
Assign'able,
Assigna'tion,
Assignee',
Assign'er,
Assign'ment.

Lat. *assigno; ad*, and *signo*, to mark or sign. To mark off, to appoint, to set apart, to appropriate to a particular use, to allot, to bring forward as a cause or reason.

> At last, as forced by false Ulysses crye,
> Of purpose he brake fourth, *assigning* me
> To the altar. *Surrey.*

He *assigned* Uriah unto a place where he knew that valiant men were. 2 *Sam.* xi. 16.

The two armies were *assigned* to the leading of two generals, both of them rather courtiers assured to the state, than martial men. *Bacon.*

The only thing which maketh any place publick, is the publick *assignment* thereof unto such duties. *Hooker.*

> Thus most invectively he (Jaques) pierceth through
> The body of the country, city, court,
> Yea, and of this our life, swearing that we
> Are mere usurpers, tyrants, and what's worse
> To fright the animals, and to kill them up
> In their *assigned* and native dwelling-place.
> *Shakspeare. As You Like It.*

> The cause of love can never be *assigned*,
> 'Tis in no face, but in the lover's mind.
> *Dryden. Tyrannic Love.*

> Both joining,
> As join'd in injuries, one enmity
> Against a foe by doom express *assign'd* us,
> That cruel serpent. *Milton.*

This institution, which *assigns* it to a person whom we have no rule to know, is just as good as an *assignment* to nobody at all. *Locke.*

The lovers expected the return of this stated hour with as much impatience as if it had been a real *assignation*. *Spectator.*

True quality is neglected, virtue is oppressed, and vice triumphant. The last day will *assign* to every one a station suitable to the dignity of his character. *Addison.*

The gospel is at once the *assigner* of our tasks, and the magazine of our strength. *Decay of Piety.*

Assign, or Assignee, in common law, a person to whom a thing is assigned or made over. The word assign is said to have been introduced in favor of natural children; who, because they cannot pass by the name of heirs, are included under that of assigns. For Assignee, in brankruptcy, see Bankruptcy.

Assignable Magnitude, in geometry, any finite magnitude.

Assignable Ratio, the ratio of finite quantities.

ASSIGNATS, a species of paper currency, issued by the government of France, for sums of different values, to the amount of many thousand millions of livres, to support the credit of the republic during the course of the revolution.

Assignment, may be more accurately defined the act of transferring the interest or property a man has in any thing; or of appointing or setting over a right to another.

Assignment of a Dowry, is the setting out of a woman's portion by the heir.

ASSIM'ILATE,
Assim'ilateness,
Assimila'tion,
Assim'ilative,
Assim'ilable.

Lat. *assimilo, assimilatum;* from *ad*, and *similis*, to bring to the like, to make like, to liken, to resemble, to convert to its own substance by digestion, and the process carried on in animal or vegetable bodies.

The spirits of many will find but naked
tions; meeting no *assimilables* wherein to re-a
natures. *Brown's Vulgar*

How little must the ordinary occupations
seem to one who is engaged in so noble a pu
the *assimilation* of himself to the Deity. B

> Fast falls a fleecy show'r: the downy flak
> Descending, and with never ceasing lapse
> Softly alighting upon all below,
> *Assimilate* all objects. *Cowper's*

A ruin is a sacred thing. Rooted for ages
soil, *assimilated* to it, and become as it were
it, we consider it a work of nature, rather tha
Gilpin's Tour to th

Assimilation, in physics, is that
by which bodies convert other bodies rel
them, or at least such as are prepared to
verted, into their own substance and
Thus flame multiplies itself upon oily
and generates new flame; air upon wat
produces new air; and all the parts,
similar as organical, in vegetables and a
first attract with some election or choice,
the same, common or not very different ju
aliment, and afterwards assimilate or
them to their own nature.

ASSINIBONS, a native tribe of North
cans, whose name has been given to the
branch of the Great Red River. This
divides itself into two branches, about
miles from its estuary in lake Winnip
eastern branch bearing the name of th
River from its source, the western, whic
in N. lat. 51° 15', and W. loug. 103° 2
of Assinibons. Extensive plains, covere
a short rank grass, and crowded with b
and elks, extend between these streams, b
ber even for firewood is scarce. The
gravelly, and beds of lime and stone fo
rapids of these rivers; which are both na
by canoes up to their source.

ASSINT, a parish of Scotland in the
of Sutherland, about fifteen miles in
and twenty-five in length.

ASSIRATUM, in antiquity, a bloody d
wherewith treaties were ratified. It was
wine and blood, called by the ancient
assir.

ASSIS, in physiology, opium, or a
made of hemp-seed, which being forme
boluses about the bigness of chestnuts,
lowed by the Egyptians, who hereby
intoxicated and ecstatic. It is called
Turks asserac.

ASSISA Cadere, in law; from assid
nonsuited; when the complainant, from d
legal evidence can proceed no further.
cadit in juratum, is where a thing in cont
is so doubtful that it must necessarily be t
a jury. Assisa continuanda, a writ dire
justices of assize for the continuation of
when certain records alleged cannot be pr
in time by the party that has occasion to us
Assisa proroganda, a writ for the stay of p
ings by reason of the parties being empl
the king's business. Assiza panis et ce
assize of bread and beer, a statute for
ing their weight and quantity. Assis
cumenti, see Nuisance. Assisa capi
dum assisæ, when the defendant ple
rectly to the assize.—Assisa judicum,

ment of the court given either against the plaintiff or the defendant.

ASSISI, a small town in the papal dominions, in the duchy of Spoleto: the see of a bishop. St. Francis, the celebrated founder of the Franciscan order, was born here; and lies buried in the Sacro Convento. Near the foot of the hill on which the town stands is a rustic chapel, dedicated to the virgin and the angels, in which St. Francis is supposed to have received his first call to devotion. Over this a spacious church has been erected; and, on the second of August, multitudes of pilgrims flock to it from the adjoining provinces. When Mr. Eustace passed it in 1802, one of the fathers informed him, that more than 10,000 persons had attended the last anniversary, and that ten had been suffocated or trampled to death, in pressing forward to touch the altar. Here are the ruins of a temple of Minerva, built about the time of Augustus. The portico consisted of six fluted Corinthian columns, each having a distinct pedestal. It is now used as the portico of the church of Santa Maria di Minerva. In the neighbourhood of Assisi are other vestiges of Roman magnificence; ruins of baths, temples, and an aqueduct. The bishopric was dissolved by the French in 1810. Twenty miles N.N.W. of Spoleto. Long. 12° 30′ E., lat. 43° 3′ N.

ASSISII, in ecclesiastical writers, persons beneficed in a cathedral church, not in a rank below that of canons; thus called, either because they were allowed an assisia or pension, or from assiduus, diligent.

ASSIST', ASSIST'ANCE, ASSIST'ANT, ASSIST'LESS. } *Assisto*; from *ad*, and *sisto*, to stop or stay. To place one'self by another so as to give him our strength; to stand by, not in the sense of to look on, but to give support—to help.

The council of Trent commends recourse, not only to the prayers of the saints, but to their aid and *assistance*: what doth this aid and *assistance* signify? *Stillingfleet.*

You have abundant *assistances* for this knowledge, in excellent books. *Wake's Prep. for Death.*

One bull, with curl'd black head beyond the rest,
And dew-laps hanging from his brawny chest,
With nodding front awhile did daring stand,
And with his jetty hoof spurn'd back the sand:
Then, leaping forth, he bellow'd out aloud:
Th' amazed *assistants* back each other crowd,
While monarch-like he rang'd the listed field;
Some toss'd, some gor'd, some trampling down, he
kill'd. *Dryden. Conquest of Granada*, part i.

Let us entreat this necessary *assistance*, that by his grace he would lead us. *Rogers.*

Loose at each joint; each nerve with horror shakes,
Stupid he stares, and all *assistless* stands.
Such is the force of more than mortal hands.
Pope. Homer's Iliad, book xvi.

God *assists* us in the virtuous conflict, and will crown the conqueror with eternal rewards. *Blair.*

While my thoughts were thus employed, I was sent by Menophis towards the mountains of the desert Oasis, that I might *assist* his slaves in looking after his flocks, which were almost without number.
Hawkesworth's Telemachus.

Eternal God,
Guide thou my footsteps in the way of truth,
And oh! *assist* me so to live on earth,
That I may die in peace, and claim a place
In thy high dwelling. *Kirke White's Poems.*

ASSISTANTS, in various trading or public companies, members who have the whole power of managing the company's affairs; and commonly called the court of assistants.

ASSISUS, in ancient law writers, a thing farmed out for a certain rent, in money or provisions.

ASSITHMENT; from ad, to, Lat. and sithe, Sax. instead of; a weregild, or compensation by a pecuniary mulct, quod vita supplicii ad expiandum delictum solvitur.

ASSIZE', *v.* & *n.* Fr. *assis*, part. past, from the verb *asseoir*, to sit. To sit judicially, or under the sanction or appointment of the law.

There nas not a point truely
That it nas in his right *assise*.
Chaucer. The Romaunt of the Rose, ch. i.

When in mid air the golden trump shall sound,
To raise the nations under ground;
When in the valley of Jehosaphat
The judging God shall close the book of fate;
And there the last *assizes* keep,
For those who wake, and those who sleep.
Dryden. Ode to the Memory of Mrs. A. Killigrew.

Assize, in old English law books, is defined to be an assembly of knights, and other substantial men, together with a justice, in a certain place, and at a certain time; but the word, in its present acceptation, implies a court, place, or time, when and where the writs and processes, whether civil or criminal, are decided by judge and jury. All the counties of England were, very anciently, divided into six circuits, and two judges assigned by the king's commission, to hold their assizes twice a-year in every county, except London and Middlesex. They were afterwards directed by magna charta, c. 12. to be sent into every county once a-year to take or try certain actions then called recognitions or assizes; the most difficult of which they are directed to adjourn into the court of common pleas to be there determined. But the present justices of assize and nisi prius are more immediately derived from the statute Westm. 2. 13 Edw. I. c. 30. explained by several other acts, particularly the statute 14 Edw. III. c. 16. and must be two of the king's justices of the one bench or the other, or the chief baron of the exchequer, or the king's serjeants sworn. They usually make their circuits in the respective vacations after Hilary and Trinity terms; assizes being allowed to be taken in the holy time of Lent by consent of the bishops at the king's request, as expressed in statute Westm. 1. 3 Edw. I. c. 51. The judges upon the circuits now sit by virtue of five several authorities. 1. The commission of the peace in every county of the circuits; and all justices of the peace of the county are bound to be present at the assizes; and sheriffs are also to give their attendance on the judges, or they shall be fined. 2. A commission of oyer and terminer, directed to them and many other gentlemen of the county, by which they are empowered to try treasons, felonies, &c. and this is the largest commission they have. 3. A commission of general gaol-delivery, directed to the judges and the clerk of assize associate, which gives them power to try every prisoner in the gaol committed for any offence whatsoever, but none except prisoners in the gaol: so that one way or other they rid the gaol of all the prisoners in it. 4. A commission of assize, directed to the judges and clerk of assize, to take assizes; that is to take the verdict of a peculiar species of jury called an assize, and summoned for the trial of landed disputes: the other authority is, 5. That of nisi prius, which is a consequence of the commission of assize, being annexed to the office of those justices by the statute of Westm. 2. 13 Edw. I. c. 30. And it empowers them to try all questions of fact issuing out of the courts of Westminster, that are then ripe for trial by jury. Formerly, the judges could not act in counties where they resided or were born; but this custom is abrogated by 49 Geo. 3. c. 91.

Assize, or jury, in Scots law, consists of fifteen sworn men, (juratores,) picked out by the court from a greater number, not exceeding forty-five, who have been summoned for that purpose by the sheriff, and given in a list to the defender, at serving him with a copy of his libel.

ASSIZER, or Assiser, from assize; an officer that has the care and oversight of weights and measures in various parts of England.

ASSO'CIATE, *v. n.* & *adj.* } Lat. *adsocio*,
Associa'tion, } from *ad*, and *so-*
Associa'tor. } *cio*, from *sequor*,
to follow. To meet together as equals, to keep in company, to be partners, confederates.

Their defender, and his *associates*, have sithence proposed to the world a form, such as themselves like. *Hooker.*

The church, being a society, hath the self-same original grounds which other politick societies have; the natural inclination which all men have unto sociable life, and consent to some certain bond of *association*; which bond is the law that appointeth what kind of order they should be *associated* in. *Id.*

A fearful army, led by Caius Marcius,
Associated with Aufidius, rages
Upon our territories. *Shakspeare.*

Sole Eve, *associate* sole, to me (beyond
Compare) above all living creatures dear.
Milton.

Associate in your town a wand'ring train;
And strangers in your palace entertain. *Dryden.*

He was accompanied with a noble gentleman, no unsuitable *associate*. *Wotton.*

They persuade the king, now in old age, to make Plangus his *associate* in government with him. *Sidney.*

Self-denial is a kind of holy *association* with God; and, by making you his partner, interests you in all his happiness. *Boyle.*

Association of ideas is of great importance, and may be of excellent use. *Watts.*

But my *associates* now my stay deplore,
Impatient. *Pope. Odyssey.*

Associate Presbytery, the title first assumed by those clergymen who associated together, after seceding from the church of Scotland, in 1733.

Associate Synod, was the highest ecclesiastical court among the Antiburgher Seceders of Scotland. Its decisions being final, like those of the General Assembly. See Antiburgher and Seceders.

Association, in law, is a patent by the king, either of his own motion, or at the suit of a party plaintiff, to the justices of assize; to have other persons *associated* with them, in order to take the assize.

Association of Ideas, is where two or more ideas constantly and immediately accompany or succeed one another in the mind, so that one shall almost infallibly produce the other, whether there be any natural relation between them or not. See Metaphysics. Wrong combinations of ideas, Mr. Locke shows, are a great cause of the irreconcileable opposition between different sects of philosophy and religion: for we cannot imagine, that all who hold tenets different from, and sometimes even contradictory to one another, should wilfully and knowingly impose upon themselves, or refuse truth offered by plain reason: but some loose and independent ideas are by education, custom, and the constant din of party, so coupled in their minds, that they always appear there together: these they can no more separate in their thoughts, than if they were but one idea; and they operate as if they were so. This gives the appearance of sense to jargon, of demonstration to absurdities, and of consistency to nonsense. It is the foundation of the greatest, and almost of all the errors in the world. Association forms a principal part of Dr. Hartley's mechanical theory of the mind. He distinguishes it into synchronous and successive; and ascribes our simple and complex ideas to the influence of this principle or habit. Particular sensations result from previous vibrations conveyed through the nerves to the medullary substance of the brain; and these are so intimately associated together, that any one of them, when impressed alone, shall be able to excite in the mind the ideas of all the rest. Thus we derive the ideas of natural bodies from the association of the several sensible qualities with the names that express them, and with each other. The sight of part of a large building suggests the idea of the rest instantaneously, by a synchronous association of the parts; and the sound of the words, which begin a similar sentence, brings to remembrance the remaining parts, in order, by successive association. Dr. Hartley maintains, that simple ideas run into complex ones by association; and apprehends, that, by pursuing and perfecting this doctrine, we may some time or other be enabled to analyse those complex ideas, that are commonly called the ideas of reflection, or intellectual ideas, into their several component parts, i. e. into the simple ideas of sensation of which they consist; and that this may be of considerable use in the art of logic, and in explaining the various phenomena of the human mind.

ASSODES, in medicine, a continued fever, wherein the surface is moderately warm, but the internal heat great.

ASSOIL', } Supposed to be from the
Assoil'ment. } Fr. *absoudre*; Lat. *absolvere*
to loose or free from. To absolve from guilt; to liberate from punishment; to pardon, to forgive.

This is my drede, and ye, my brethren tweie,
Assoileth me this question I preie.
Chaucer. The Marchantes T

But secretly *assoiling* of his sin,
No other med'cine will unto him lay.
Mirror for Magistra

ll aske of you a certayne question, whiche
e me, I in lykewyse wyll tell you by what
do these thynges.

Bible, 1551. *Matthew* ch. xxi.

such guilefull appendices of oathes im-
im, that this *assoilement* was not so much
e of his olde, as the prologue of his new
xations.

Speed's History of Great Britaine.

OILE, in our ancient law books, sig-
bsolve from an excommunication.

NANCE, in rhetoric and poetry, a term
re the words of a phrase or verse have
sound or termination, and yet make no
hyme. These are usually accounted
n English; though the Romans some-
ed them with elegance: as, Militem
it, exercitum ordinavat, aciem lus-

RT, } Fr. *assortir*, from the Lat.
TMENT. } *sors*, lot. To sort, to put
f the same kind or class together, to
o suit.

e ne be but fools of good disport!
I wole you teachen a new play;
t down here by one *assort*,
And better mirth never ye seigh.

Sir Ferumbras, in Ellis, v. ii. p. 401.

e sat musically at it in a shed over against
at, in *assorting* four dozen of bells for the
whistling to each bell as he tied it on with a

Sterne's Tristram Shandy.

ective is by nature a general, and in some
n abstract word, and necessarily presupposes
f a certain species or assortment of things,
hich it is equally applicable.

Smith's Moral Sentiments.

S, a sea-port of Natolia, subject to the
n a bay of the Ægean Sea, twelve miles
t of Troas.

UMINA, in botany, the name given by
e of Guinea to the shrub whose leaves
as a cure for long worms, which are
their flesh: they bruise the leaves, and
rge lump of the mass to the part.

A'GE, } Old Fr. *assouager*. The
GE'MENT, } modern Fr. is *soulager*. To
SIVE. } soften, to alleviate pain or
lessen, to allay, to render tranquil.

, when shall these weary woes have end;
heir ruthless torment never cease,
my days in pining languor spend,
ope of *assuagement* or release?

Spenser's Sonnets.

Shall I, t' *assuage*
Their brutal rage,
The regal stem destroy?

Dryden's Albion.

The rest
oiled and roasted for the future feast,
hief invited guests were set around;
hunger first *assuag'd*, the bowls were crown'd,
in deep draughts their cares and labours
rown'd.

Id. Fables.

f in the breast tumultuous joys arise,
sick her soft *assuasive* voice supplies.

Pope's St. Cæcilia.

freshing winds the summer's heats *assuage*;
kindly warmth disarms the winter's rage.

Addison.

Patroclus sat contentedly beside
Eurypylus, with many a pleasant theme,
Soothing the generous warrior, and his wound
Sprinkling with drugs *assuasive* of his pains.

Cowper's Iliad, bk. xv. p. 274.

ASSUEFAC'TION, } *Assuefacio*, *assuefac-*
As'SUETUDE. } *tum*, to accustom. The
state of being accustomed.

We see that *assuetude* of things hurtful, doth make them lose the force to hurt.

Bacon's Natural History.

Right and left, as parts inservient unto the motive faculty, are differenced by degrees from use and *assuefaction*, or according whereto the one grows stronger.

Brown's Vulgar Errours.

ASSUME', } *Assumo*, *assumptum*, *ad*
ASSU'MER, } and *sumo*, to take to [one's
ASSU'MING, } self.] To appropriate, to
ASSUMPT', *v.* & *n.* } claim more than is due, to
ASSUMP'TION. } arrogate, to suppose something granted without proof.

Preserve the right of thy place, but stir not questions of jurisdiction; and rather *assume* thy right in silence, and de facto, than voice it with claims and challenges. *Lord Bacon's Essays.*

His majesty might well *assume* the complaint and expression of king David. *Clarendon.*

With ravish'd ears
The monarch hears;
Assumes the god,
Affects to nod;
And seems to shake the spheres. *Dryden.*

His haughty looks, and his *assuming* air,
The son of Isis could no longer bear. *Id.*

This makes him over-forward in business, *assuming* in conversation, and peremptory in answers. *Collier.*

For spirits freed from mortal laws, with ease
Assume what sexes and what shapes they please.

Pope.

This, when the various god had urg'd in vain,
He strait *assum'd* his native form again. *Id.*

The personal descent of God himself, and his *assumption* of our flesh to his divinity, more familiarly to insinuate his pleasure to us, was an enforcement beyond all methods of wisdom.

Hammond's Fundamentals.

In every hypothesis something is allowed to be *assumed*. *Boyle.*

Upon the feast of the *assumption* of the Blessed Virgin, the pope and cardinals keep the vespers.

Stillingfleet.

Adam, after a certain period of years, would have been rewarded with an *assumption* to eternal felicity.

Wake.

It is scarce possible to conceive any scene so truly agreeable, as an assembly of people elaborately educated, who *assume* a character superior to ordinary life, and support it with ease and familiarity. *Usher.*

It very seldom happens that a man is slow enough in *assuming* the character of a husband, or a woman quick enough in condescending to that of a wife.

Steele.

Habits are soon *assumed*, but when we strive
To strip them off, 'tis being flayed alive. *Cowper.*

ASSU'MENT. *Assuo*, to stitch or tack on. A tacking on.

This *assument* or addition, Dr. Marshall says, he never could find any where but in this Anglo-Saxonick translation, and that very ancient Greek and Latin MS copy of Beza's.

Lewis's Editions of the Eng. Trans. of the Bible.

ASSUMPSIT, in the law of England, or promise, is of the nature of a verbal covenant, and wants nothing but the solemnity of writing and sealing to make it absolutely the same. If therefore, it be to do any explicit act, it is an express contract, as much as any covenant: and the breach of it is an equal injury. The remedy indeed is not exactly the same: since, instead of an action of covenant, there only lies an action upon the case, for what is called an assumpsit or undertaking of the defendant; the failure of performing which, is the wrong or injury done to the plaintiff, the damages whereof a jury are to estimate and settle. As, if a builder promises or undertakes, that he will build and cover a house within a limited time, and fails to do it, an action on the case arises against the builder, and the party injured may recover a pecuniary satisfaction. But some agreements, though ever so expressly made, are deemed of so important a nature, that they ought not to rest on a verbal promise only, which cannot be proved but by the memory of witnesses, and which oftentimes leads to perjury To prevent this, the statute of frauds and perjuries, 29 Car. II. c. 3. enacts, that in the five following cases, no verbal promise shall be sufficient to ground an action upon; but at the least some note or memorandum of it shall be made in writing, and signed by the party to be charged therewith: 1. Where an executor or administrator promises to answer damages out of his own estate. 2. Where a man undertakes to answer for the debt, default, or miscarriage, of another. 3. Where any agreement is made upon consideration of marriage. 4. Where any contract or sale is made of lands, tenements, or hereditaments, or any interest therein. 5. And lastly, where there is any agreement that is not to be performed within a year from the making thereof. In all these cases, a mere verbal assumpsit is void.

Assumption, a festival in the Romish church, in honor of the miraculous ascent of the Virgin Mary into heaven: the Greek church, who also observe this festival, celebrate it on the 15th of August with great ceremony.

Assumption, or Assongong, one of the Ladrone islands, in the Pacific Ocean. Father Gobien asserts that it is eighteen miles in circumference; but Perouse diminishes its size to three. It is of a conical figure, rising 600 feet in height, of dreary aspect, and almost covered with lava from the eruptions of a volcano in the centre. A few cocoa-nut trees are found on the island; but there is no anchorage near the shore. Fifteen miles south of St. Lawrence. Long. 140° 55′ E., lat. 19° 45′ N.

Assumption, the capital city of Paraguay, in America. It is situated on the eastern bank of the river Paraguay, eighteen miles above its junction with the first mouth of the Pilcomayo. It was originally a small fort, built in 1538, and in 1547 was erected into a bishopric. It is now inhabited by about 500 families of Spaniards, and several thousand Indians and Meztizoes.

ASSUMPTIVE Arms, in heraldry, are such as a person has a right to assume, with the approbation of his sovereign, and of the heralds: thus, if a person, who has no right by blood, and has no coat of arms, shall captivate, lawful war, any gentleman, nobleman, or he is, in that case, entitled to bear the sh that prisoner, and enjoy it to him and hi for ever.

ASSURE′,
Assur′ed,
Assur′ance,
Assur′edly,
Assur′edness.

Fr. *assurer*, to mak To secure, to assert warrant, vouch, certi spire with confidence.

What man is he that boasts of fleshly mi
And vain *assurance* of mortality;
Which all so soon, as it doth come to fight
Against spiritual foes, yields by and by.
Faerie

I must confess, your offer is the best;
And, let your father make her the *assuranc*
She is your own, else you must pardon me
If you should die before him, where's her d
Sha

I hold the entry of common-places to be a of great use and essence in studying, as tha *assureth* copiousness of invention, and con judgment to a strength. *Bacon's*

An *assurance*, being passed through for a co fine, hath come back again by reason of som sight.

I revive
At this last sight; *assur'd*, that man shall l
With all the creatures, and their seed prese

Well is that part of us lost which m *assurance* of the salvation of the whole.
Hall's Contem

Assuredly he will stop our liberty, till we him his worship.

It is the ennobling office of the understan correct the fallacious and mistaken reports senses, and to *assure* us that the staff in the straight though our eye would tell us it is c

The obedient, and the man of practice, sh grow all their doubts and ignorances; till pe pass into knowledge, and knowledge advar *assurance*.

Hath he found in an evil course that com *assurance* of God's favour, and good hopes of h condition, which a religious life would hav him?

Almanz. No; there is a necessity in fate;
Why still the brave bold man is fortunate;
He keeps his object ever full in sight,
And that *assurance* holds him firm and right.
Dryden. Conquest of Granad

A man without *assurance* is liable to be m easy by the folly or ill-nature of every one verses with.
Melmoth's Translation of Cicero'

How happy it is to believe with a stedfast that our petitions are heard even while we ar them, and how delightful to meet with a pr in the effectual and actual grant of them.
Cowper'

The soul reposing on *assured* relief,
Feels herself happy amidst all her grief
Forgets her labour, as she toils along,
Weeps tears of joy, and bursts into a so

ASSURANCE.

URANCE, or INSURANCE, in commercial
Under the latter word, every thing con-
with the subjects, both of life and of
insurance, might with great propriety be
ed. But mercantile usage, and the titles
ous respectable societies in this country,
ppropriated the former word to contracts
ing sums of money upon the continuance
or in the event of death; and the latter,
insurance of property against the contin-
of the sea. We propose, under LIFE
TIES, to enter further into the principles on
he contingency of life is calculated; under
E INSURANCE, to treat of all that is usually
sed under that head; confining ourselves
paper to the practical detail of the methods
d by the most respectable Assurance com-
in the conduct of their affairs, and the
alculations on which they proceed.

rance on lives is the guaranteeing a cer-
m of money to be paid in the event of a
named being alive at a certain time, or
within a certain time, or to be paid within
n time after the death of a person named.
rty agreeing to pay this sum, is termed
urer; the sum he receives for his hazard,
ompensation for what he is to pay, is
the Premium of assurance; and the in-
nt by which the parties are mutually bound
contract, is called a Policy of assurance.
are granted sometimes by individuals;
this case the policies, though often for
sums than the companies insure, are
for short periods, and at higher rates
e companies charge. It must be obvious,
they are particular bargains between in-
ls under circumstances known, par-
y, perhaps, or that ought to be known by
oncerned, no uniform plan of proceeding
expected.

the respectable societies who conduct this
s in the metropolis, and other parts of
Britain, proceed upon settled and mathe-
principles. Tables of the ordinary dura-
human life, formed from bills of mortality,
basis of their calculations. The register
tality at Northampton, originally pub-
by Dr. Price, is that generally adopted;
ng been found by long experience that
fewer deaths happen, according to the
f the Equitable Assurance Society, than
on that scale to be expected. The most
d tables are those of Aikin, De Parcieux,
oom, and Gorsuch. M. de Moivre as-
that if eighty-six persons were born at the
me, one would die in each year, until the
number ceased to live. Although this
sis has not been found accurate enough
nsive business in this way, it furnishes an
e for estimating the expectation of life.
t the given age of a person from 86;
dividing the quotient by two, the remain-
es the expectation nearly. Thus, let the
40, then $\frac{86-40}{2}$ is 23, which differs very little from the Northampton table. At the age of 50 again, the error is trifling, the Northampton table giving 17·99, De Moivre's, 18. But, in the higher ages, the error becomes considerable.

A scale of life having been adopted, the table of premiums to be paid by the parties insuring is calculated in the following manner:—The premium for a certain age being supposed to be known, then the premium for a person of one year younger, being compounded of the premium for one year and the present value of the above premium, is easily calculated from the table of lives, thus:—Multiply the premium on the oldest life into the number of persons alive in the tables of that age, and divide by the number of persons of the younger age alive in the tables. This sum, discounted for a year, gives the premium for assuring the desired sum at the end of the year. Then multiply the sum to be assured into the number of persons of the younger age, that die according to the tables in a year, and divide by the number of persons alive at that age, and this sum discounted for a year is the assurance of the sum for the first year, and consequently the two sums, added together, give the desired premium. Now, as the oldest person in the scale of life dies in the ensuing year, the premium on him is evidently the sum to be paid discounted for one year, and thence the premium for the age below is ascertained by the above rule; and so of every age in succession. Errors cannot be committed on this plan without detection, as every step is checked by a similar table drawn out for the value of an annuity at each age. In the same manner are tables formed for the assurance of a sum payable at the death of one out of two persons, or at the death of the survivor of two persons, or at the death of one on the contingency of his surviving another, and so on. The tables generally adopted by the companies, on the contingency of one person surviving another, being calculated by an approximation, founded on the expectation of their lives, do not partake of the mathematical accuracy of the other tables; but the companies, in this case, grant assurances at times to their own disadvantage; for if they take rather too much upon one life, they lose that sum upon the other; the premium payable on the death of one of two parties, being divided by the above-mentioned rule of approximation into two premiums, to be paid by the two parties on the contingency of one surviving the other. These rules apply to tables of rates for the payment of a gross premium: but as it is generally more convenient to pay an equivalent annual sum, a table of rates is made for this case, which is formed by dividing the gross premium by the value of an annuity upon each age added to unity. If the annual premium were paid at the end of the year, the addition of unity would be unnecessary; but a policy is not granted till one premium is paid, and hence the necessity of the addition is obvious.

Premiums being thus settled from a fixed table of observations on life, it is evident that, unless the deaths happen exactly in the order prescribed by the tables, there will be a surplus or deficiency of capital for the payment of the assured sums. The management of the surplus, or apprehended surplus, which the prudence of respectable companies generally insures, is different in different companies. Either the company appropriates the whole of the surplus to itself, or makes a compensation to the assured for it. In the former case, the company pays the sum specified in the policy, and no more; consequently, a party may pay to the office a sum far greater than his executors or assigns receive in return. Thus, if an assurance is effected on a person between sixteen and seventeen for £100, receivable at his death, the annual premium is £2. 0*s.* 8*d.*; and if he lives forty-nine years, he will have paid more than the whole sum to be received, without computing interest on these payments. The surplus of the accumulation of premiums above the claims may be great from two causes: first, the increased interest obtained by the company above that by which the table of rates was computed; and, second, a longer duration of life in the earlier years than is assigned by the table; and here great circumspection on the part of the company is requisite to preserve it from imposition, and to secure the best lives that circumstances admit. In the companies where only the sum specified in the policy is paid, the surplus does not go entirely to the company; for it is common in these offices to allow a per centage on the premium to the party who brings an assurance to them, generally a solicitor, who thus participating in the gains of the company, has an interest in increasing its concerns, though to the evident disadvantage of his client.

Where the surplus is made advantageous to the assured, two methods are adopted; the one is to add, at certain periods, a sum to each policy; the other to diminish the premium. In both cases a valuation is made of all the annual premiums, with the past and future expected accumulations, and also of the claims upon every policy. If the former exceed the latter to a sufficient amount, then an addition is made to each policy, or the premium is diminished. It is necessary, however, that the utmost care should be taken to secure to each policy the sum named in it, with every addition made to it; and hence a third part of the surplus is constantly retained to guard against possible contingencies. This reservation has occasioned a singular anomaly in one of the most distinguished companies for life assurance. In that company all are partners, being mutually guarantees to each other for the payment of their respective claims. The surplus arising from the excess of premiums, with their accumulations above the claims, evidently belongs to the whole company, and consequently each partner is entitled to a portion of it. But of this surplus, a third being constantly reserved, and each person at his death ceasing to be a partner, every person leaves behind him a portion for his successors. Such has been the extreme caution of the Equitable Society.

This led to the formation of a plan, which is
adopted by the Rock Assurance Society
vests this third in determinate hands.
this, the company consists of a number
prietors, each of whom is bound to keep
assurance with it, and whose interest in th
surances is greater than that derived fr
profit of assurances granted to non-prop
The company takes upon itself the whole
policies made with it, being bound to
each party assured the sum specified in
licy; and additions are made to each po
the manner above-mentioned. But th
reserved is joined to, and makes part of th
scription capital stock; and the interest
is annually divided among the prop
Thus the third reserved belongs to, and co
to add to, the security of the company;
non-proprietor, secured from all risk, parti
in the two-thirds divisible at every period

Other modes are sometimes adopted
pose of accumulating property; such as,
minishing, at certain periods, the premium
on assurance; in this case the sum speci
the policy is paid, though the party assur
have paid a much less sum than in th
panies above mentioned. The diminu
premium depends on the excess of ca
hand, with the present value of future pre
above the claims that are or may be mad
it, and consequently the same care is ne
to reserve a part of the surplus for fear of
contingencies. The public have thus a
either to receive a fixed or an increasing
the fixed sum by means of a definite or
bably decreasing premium, and an inc
sum by means of a definite premium.

Assurance policies are generally conf
the limits of Europe, but they are capabl
ing extended to all parts of the world.
cases an addition is made to the premi
cording to the supposed addition to
from unhealthiness of climate, and danger
seas. Additions are also made to the pr
on account of the profession (as of the
of the assured; on account of disease,
gout, by which he is occasionally afflicted
diseases, as of small-pox and measles, to
he may be liable.

The oldest of the societies for assuran
lives in London, is the Amicable Society
tuted by charter in the year 1706. Th
contribution was originally required from
member, whatever his age might be,
sums received at the death of member
variable, depending on the number of
that died in the same year. Subsequent
tions were made in this company by su
charters. At present the several interests
members are divided into shares, each shar
now warranted to produce £200 at the
the insured, together with such additions
arise from the circumstances of the year i
the death happens; and any number of
and half shares, not exceeding sixty-five
may be granted on one and the same
which assurances may be effected from
£5000, and participate in the benefits of
ciety.

The Royal Exchange Assurance Com

s charter in 1720, and is principally en-
insuring ships and goods at sea, and of
and goods from fire; but it also grants
s and assurances on life. In the latter,
es itself to the payment of the sum as-

Equitable is the most considerable in
f numbers, and, on the whole, perhaps
t respectable of the societies for the as-
of lives, to which it is chiefly confined.
society all are partners, and mutually
of each other. It arose from small be-
, and has made considerable alterations
e rate of its first premiums, till it settled
ble annexed to this article, which is that
y adopted by these associations. At cer-
riods additions have been made to the
; and, in this manner, its affairs were
ed till December 7, 1809, when a change
re respecting the members then assured,
, that instead of waiting till the end of the
terval, for assigning a sum out of the ac-
ions to each policy, every member should
o per cent. annually assigned to his po-
ring the years of this period. Conse-
, all holders of policies, prior to the year
ill leave to their heirs the sum assured
olicy, together with its accumulations up
ear 1810, and also two per cent. per an-
his life, within 1810 and 1820; but this
does not accrue to members entering at
of the year 1809. Whether this plan
continued or extended, time will show.
mber of the members in this society
necessary to change some of their
es respecting votes; and it was wisely
, that persons becoming members, after
December 1809, should not have a vote
eral meetings, unless they had been as-
t five years, for the whole continuance
n the sum of £2000; and to be a direc-
qualification is an assurance of £5000
ame time, which must have been held
years.

history of this society is very important,
been well treated by Dr. Price, in his
tions on Reversionary Payments, and by
rgan. In consequence of the connexion
Price with this institution, he drew up
rks on the various societies which soon
ung up, and whose names, but for his
f them, would now be forgotten. They
rmed chiefly about the years 1770 and
ffering very fallacious terms to the pub-
which the aged were benefited at the ex-
f their juniors; and the evil is not yet

ome time no other important society
ut, in the year 1792, the Westminster
surance was formed. The Pelican in
he Globe in 1799; the Albion in 1805;
k and the Provident in 1806; the Eagle,
London Life Association, and Atlas, in
The Rock and Equitable we have no-

Provident combines with life, policies on
t it assigns also, at certain times, addi-
its policies. The Hope is also a fire and
e, and both are proprietary companies.

The rates in these societies are the same as those in the Equitable and Rock.

The Albion and the Globe are life and fire assurance companies; their rates are also the same They pay also the sum assured; but a liberal commission is allowed to solicitors, and to others who effect assurances.

The London Life Association is confined entirely to life assurances; but it differs from the others in this, that its aim is, that the benefits resulting from its transactions shall be enjoyed by the members during life; in other words, the society assures to a person the sum named in the policy, and no more; but at certain times it considers whether the surplus of the accumulations above the claims is sufficient to admit of a diminution of premium, and one is made accordingly. In this society all are members and assurers one of the other, and consequently the surviving members at any time are bound to make up the deficiency, if any should arise by this mode of arrangement. This could be done by raising, in the first instance, the premiums that have been lowered; and it is very improbable, that, with good management, any thing farther would be necessary. In imitation of these London Companies, several have been formed throughout the country.

The practical mode of effecting an assurance in these societies is as follows: The party desirous of effecting an assurance, receives from the office of the company a printed paper called a declaration, which he fills up with the name of the party to be assured, his age, the place and time of his birth, and place of his present residence, with certain particulars as to his health. This declaration is then duly signed; and it contains a clause, stating, that any falsehood in the declaration invalidates the policy. To corroborate the statement, references are given to two persons well acquainted with the party on whom the assurance is made, one of whom is to be a medical person, and sometimes more references are required. The reasons for these precautions are obvious.

When the declaration has been thus completed, the person by whom the assurance is made makes his appearance before the directors of the company, who enquire into the general state of his health, and a minute is entered in their books accordingly. The letter of the referees, with the declaration, are subsequently laid before the court, which from these documents, and information frequently derived from other sources, forms its decision; and this is entered on the minutes of the court, and communicated to the applicant. A certain time is allowed for the payment of the premium; and if it is not paid within that time, the assurance cannot be effected, but by a fresh application to the court, according to the forms above mentioned. On the payment of the premium a receipt is given, containing the number of the policy, which is then made out according to the declaration, inspected by the court, signed by a certain number of directors, and delivered to the other party interested in it.

If the person, on whose life the assurance is made cannot appear before the directors, or any one appointed by them for that purpose, an additional sum is charged for non-appearance. There is also a duty to be paid to government on each policy, and this, with a small entrance fee, makes an addition to the first year's premium. But the premium itself is only named in the policy, as on the future payment of this sum its existence depends.

A policy is assignable; and it often forms a security for sums advanced, and not unfrequently becomes an object of sale. In these cases, the holder of the policy pays the future premiums, and the advantage of a purchaser consists in holding a policy at a less premium than he must have paid at the present age of the party, on whose life the assurance was made. Thus, supposing a policy to have been granted for the payment of a thousand pounds, at the death of a party aged between thirty-seven and thirty-eight, when the policy was made; suppose it is sold when the party is between fifty and fifty-one; the purchaser will have to pay £32. 5*s.* annually, during the existence of the policy: whereas, if he had taken out a policy at the present age of the party, his premium would be £46. 15*s.* For the difference between these two sums, namely £14. 10*s.*, a price is fixed on; but it is to be observed, that, in the sale of a policy in the market, this disadvantage attends it,—that the bidders, not being acquainted with the person on whose life the policy is made, and being liable to trouble and expense, to ascertain that he is alive at each payment of the premium, must make a deduction on this account, from what they might otherwise presume to be a compensation for the difference between the two premiums.

On the death of the party on whom the claim depends, certain documents are required, such as the register of the burial of the deceased; and references to the medical persons or others who attended him in his last illness; and, if he effected the policy himself, the probate of his will, or, if it has been assigned to another, the copy of the assignment. The grounds of these precautions are, with respect to the receiver of the sum assured, obvious; and the nature of the death must be ascertained; as, in case of suicide, or dying by the hands of justice, or on a voyage on the high seas, without licence from the company, (except, in general, in going from one part in the united kingdom to another,) the policy is vitiated. In the interval between the notice of the party's death, and the time assigned for the payment of the claim, due investigation is made; and, every thing having been found satisfactory, the claimant brings with him the policy and a receipt for the sum claimed, which is immediately paid to him; the seals are torn from the policy, and the contract is at an end. In the case that a claim is payable, in the event of a person being alive at a certain time, his appearance before the court is requisite, or sufficient proof must be given that he was alive at the time defined by the policy.

Policies depending on a person being alive at a certain time, are very rare, and chiefly confined to endowments for children, in which case the payment of a gross sum down, or of an annual payment till the child attains the age of twenty-one, secures to that child, at that age, the sum named in the policy. This mode of assurance has led some offices to compose a table of rates according to which, a person at the age of twenty is required to pay a premium, which would produce at legal interest more than he would receive at the expiration of the year, from the company; and thus a person, if any such could be found to effect an assurance of this kind, would run the risk of losing the sum assured, and receive, if successful, not so much as he could have attained without any risk at all.

On the whole, the doctrine of assurance must always be considered a subject of the first importance, in a commercial state like that of Great Britain, and to involve an immense number of interests. When we consider the thousands of families in this country, who are living in a state of comparative affluence, without possessing any, or very little, disposable property; whose income, in fact, depends almost entirely on the exertions of the head of the family, and with the extinction of whose life every source of income ceases; when we contemplate the poverty and distress in which many widows, with their helpless children, would be plunged by such an event, we cannot estimate too highly the advantages which are held out by those societies, who, on honorable principles, furnish the means whereby every provident father and husband may, in part, avert the consequences of a premature death; to which every one is liable, and against which event every man ought to be provided. Perhaps, no part of the civil economy of this country shows more decidedly the high moral state of the middling classes of the people, than the immense amount of life assurances effected in the different offices of the metropolis, and in those of like local companies in several of the counties in England; nor, perhaps, can we have a stronger instance of the high degree of confidence that the people are disposed to place in the moral rectitude of the government; by far the greater part of the capital of the companies to which we have alluded being invested under government securities.

The following is a table of the rates generally acted upon by the Life Assurance Offices in the capital.

ASSURANCE OF SINGLE LIVES.

To secure a Sum to the Nominee, or to the lawful Representatives of the Assured.

Age.	Premium per cent. if assured from year to year.			Premium per cent. per an. if assured for seven years.			Premium per cent. per an. if assured for the whole term of life.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.
8 to 14	0	17	9	1	1	5	1	17	7
15	0	17	11	1	2	11	1	18	7
16	0	19	2	1	4	7	1	19	8
17	1	1	2	1	6	1	2	0	8
18	1	3	3	1	7	5	2	1	8
19	1	5	0	1	8	6	2	2	8
20	1	7	3	1	9	5	2	3	7
21	1	8	10	1	10	1	2	4	6
22	1	9	3	1	10	6	2	5	4
23	1	9	8	1	11	0	2	6	3
24	1	10	2	1	11	6	2	7	1
25	1	10	7	1	12	1	2	8	1
26	1	11	1	1	12	7	2	9	1
27	1	11	7	1	13	2	2	10	1
28	1	12	1	1	13	9	2	11	1
29	1	12	8	1	14	4	2	12	3
30	1	13	3	1	14	11	2	13	5
31	1	13	9	1	15	7	2	14	7
32	1	14	4	1	16	3	2	15	9
33	1	15	0	1	16	10	2	17	1
34	1	15	8	1	17	8	2	18	5
35	1	16	4	1	18	10	2	19	10
36	1	17	0	1	19	7	3	1	4
37	1	17	9	2	0	8	3	2	10
38	1	18	6	2	1	9	3	4	6
39	1	19	3	2	2	11	3	6	2
40	2	0	8	2	4	1	3	7	11
41	2	2	0	2	5	4	3	9	9
42	2	3	6	2	6	6	3	11	8
43	2	4	6	2	7	9	3	13	8
44	2	5	6	2	9	2	3	15	9
45	2	6	8	2	10	10	3	17	11
46	2	7	10	2	12	6	4	0	2
47	2	9	0	2	14	4	4	2	7
48	2	10	3	2	16	4	4	5	1
49	2	12	3	2	18	6	4	7	10
50	2	15	1	3	0	8	4	10	8
51	2	17	4	3	2	8	4	13	6
52	2	19	1	3	4	9	4	16	5
53	3	1	0	3	7	0	4	19	7
54	3	3	0	3	9	5	5	2	10
55	3	5	0	3	12	0	5	6	4
56	3	7	3	3	14	8	5	10	1
57	3	9	8	3	17	6	5	14	0
58	3	12	3	4	0	6	5	18	2
59	3	15	1	4	3	8	6	2	8
60	3	18	1	4	7	1	6	7	4
61	4	1	5	4	10	11	6	12	4
62	4	3	11	4	15	0	6	17	9
63	4	7	8	4	19	8	7	3	7
64	4	10	9	5	4	10	7	9	10
65	4	15	2	5	10	10	7	16	9
66	5	0	1	5	17	7	8	4	1
67	5	5	6	6	5	2	8	12	1

SURVIVORSHIP OF A LIFE ASSURED.

To secure a Sum to the Nominee or lawful Representatives of the Assured, in case a Person named shall survive another.

Age of the life assured.	Age of the life against which the assured is made.	Premium per cent. per annum.		
		£.	s.	d.
10	10	1	8	6
	20	1	9	1
	30	1	8	3
	40	1	7	8
	50	1	6	11
	60	1	6	0
	70	1	4	11
	80	1	3	4
20	10	1	16	6
	20	1	17	0
	30	1	15	9
	40	1	14	8
	50	1	13	6
	60	1	12	1
	70	1	10	6
	80	1	8	3
30	10	2	5	5
	20	2	6	0
	30	2	4	6
	40	2	2	9
	50	2	0	11
	60	1	18	10
	70	1	16	7
	80	1	13	9
40	10	2	19	2
	20	2	19	10
	30	2	18	2
	40	2	15	11
	50	2	12	10
	60	2	9	4
	70	2	5	11
	80	2	1	10
50	10	4	0	11
	20	4	1	10
	30	4	0	1
	40	3	17	10
	50	3	13	10
	60	3	7	7
	70	3	1	6
	80	2	15	0
60	10	5	16	9
	20	5	18	0
	30	5	16	3
	40	5	14	0
	50	5	10	7
	60	5	2	4
	70	4	9	10
	80	3	17	11
67	10	8	1	0
	20	8	2	9
	30	8	0	10
	40	7	18	7
	50	7	15	6
	60	7	8	8
	70	6	10	8
	80	5	8	9

ASSURANCE ON TWO JOINT LIVES.

To secure a Sum, payable when either of Two Persons named shall happen to die.

Age.	Age.	Premium per cent per annum.		
		£.	s.	d.
10	10	2	17	1
	15	3	1	1
	20	3	5	7
	25	3	9	3
	30	3	13	9
	35	3	19	6
	40	4	6	10
	45	4	15	11
	50	5	7	10
	55	6	2	8
	60	7	2	9
	67	9	6	3
15	15	3	5	0
	20	3	9	6
	25	3	13	1
	30	3	17	6
	35	4	3	1
	40	4	10	4
	45	4	19	5
	50	5	11	3
	55	6	6	1
	60	7	6	0
	67	9	9	5
20	20	3	13	11
	25	3	17	5
	30	4	1	9
	35	4	7	3
	40	4	14	6
	45	5	3	6
	50	5	15	4
	55	6	10	2
	60	7	10	2
	67	9	13	9
25	25	4	0	10
	30	4	5	0
	35	4	10	3
	40	4	17	4
	45	5	6	2
	50	5	17	10
	55	6	12	6
	60	7	12	5
	67	9	15	9

Age.	Age.	Premium per cent. per annum.		
		£.	s.	d.
30	30	4	8	11
	35	4	14	1
	40	5	0	11
	45	5	9	6
	50	6	1	0
	55	6	15	5
	60	7	15	0
	67	9	18	1
35	35	4	19	0
	40	5	5	6
	45	5	13	10
	50	6	5	0
	55	6	19	2
	60	7	18	6
	67	10	1	2
40	40	5	11	9
	45	5	19	9
	50	6	10	8
	55	7	4	5
	60	8	3	4
	67	10	5	6
45	45	6	7	4
	50	6	17	9
	55	7	11	0
	60	8	9	6
	67	10	11	1
50	50	7	7	8
	55	8	0	3
	60	8	18	2
	67	10	18	10
55	55	8	12	2
	60	9	9	0
	67	11	8	5
60	60	10	4	9
	67	12	2	1
67	67	13	15	8

ASSURGENT Leaves, in botany, denote such as are first bent down, and then rise erect towards the apex.

ASSUS, or Assos, in ancient geography, a town of Troas, though by others supposed to be of Mysia, and the same with Apollonia, but different from the Apollonia on the Rhyndacus. Ptolemy places it on the sea coast, but Strabo more inland. It was the country of Cleanthes, the stoic philosopher, who succeeded Zeno. St. Luke and others of St. Paul's companions in his voyage, Acts xx. 13, 14, went by sea from Troas to Assos: but St. Paul went thither by land; and, meeting them at Assos, they all went together to Mitilene.

ASSYRIA, an ancient kingdom of Asia, concerning the extent, commencement, and duration of which, historians differ greatly in their accounts. Several ancient writers, in particular Ctesias and Diodorus Siculus, have affirmed that the Assyrian monarchy, under Ninus and Semiramis, comprehended the greater part of the known world. Had this been the case, it is not likely that Homer and Herodotus would have omitted a fact so remarkable. The sacred records intimate that none of the ancient states or kingdoms were of considerable extent; for neither Chedorlaomer nor any of the neighbouring princes were tributary or subject to Assyria; and we find nothing of the greatness or power of this kingdom in the history of the judges and succeeding kings of Israel, though the latter kingdom was oppressed and enslaved by many different powers in that period. It is highly probable, therefore, that Assyria was originally of small extent. According to Ptolemy, it was bounded on the north by Armenia major; on the west by the Tigris; on the south by Susiana; and on the east by Media.

The revolutions of the Assyrian monarchy were numerous. Its founder was Ashur, the second son of Shem, who went out of Shinar, either by the appointment of Nimrod, or to elude the fury of that tyrant; conducted a large body of adventurers into Assyria, and laid the foundation of Nineveh, Gen. x. 11. These events happened not long after Nimrod had established the Chaldean monarchy, and fixed his residence at Babylon. The Persian historians suppose, that the kings of Persia of the first dynasty were the same with the kings of Assyria, of whom Zohath, or Nimrod, was the founder of Babel. Herbelot Orient. Bib. v. Bagdad. It does not, however, appear, that Nimrod reigned in Assyria. The kingdoms of Babylon and Assyria were originally distinct and separate, Micah v. 6; and in this state they remained until Ninus conquered Babylon, and made it tributary to the Assyrian empire. Ninus, the successor of Ashur, Gen. x. 11, Diod. Sic. lib. 1, seized on Chaldea, after the death of Nimrod, and united the kingdoms of Assyria and Babylon. This prince is said to have subdued Asia, Persia, Media, Egypt, &c. If he did so, the effects of his conquests were of short duration; for in the days of Abraham we do not find that any of the neighbouring kingdoms were subject to Assyria. He was succeeded by Semiramis, a princess of an heroic mind; bold, enterprising, fortunate; but of whom many fabulous things have been recorded. It appears, however, that there were two princesses of the same name, who flourished at very different periods. One of them was the consort of Ninus; and the other lived five generations before Nitocris, queen of Nebuchadnezzar, Euseb. Chron. p. 58. Herod. lib. 1, cap. 184. This fact has not been attended to by many writers. Whether there was an uninterrupted series of kings from Ninus to Sardanapalus, or not, is still a question. Some suspicion has arisen, that the list which Ctesias has given of the Assyrian kings is not genuine; for many names in it are of Persian, Egyptian, and Grecian extraction. Nothing memorable has been recorded concerning the successors of Ninus and Semiramis. Of that effeminate race of princes it is barely said, that they ascended the throne, lived in indolence, and died in their palaces at Nineveh. Diodorus relates, that in the reign of Teutames, the Assyrians solicited by Priam their vassal, sent to the Trojans a supply of 20,000 foot and 200 chariots, under the command of Memnon, son of Tithonus, president of Persia. But this is not confirmed by any other author. Sardanapalus was the last, and by all accounts the most effeminate of the ancient Assyrian kings. Historians have unanimously reprobated his character; and Lord Byron has made it the foundation of a beautiful poem. We have only to add, that Arbaces, governor of Media, taking advantage of Sardanapalus's indolence, withdrew his allegiance and rebelled against him. He was encouraged in this revolt by the advice and assistance of Belesis, a Chaldean priest, who engaged the Babylonians to follow the example of the Medes. These powerful provinces, aided by the Persians and other allies, who despised the effeminacy, or dreaded the tyranny of their Assyrian lords, attacked the empire on all sides. Their most vigorous efforts were, in the beginning, unsuccessful. Firm and determined, however, in their opposition, they at length prevailed; defeated the Assyrian army, besieged Sardanapalus in his capital, which they demolished, and became masters of the empire A. A. C. 821. The Assyrian empire was now divided into three kingdoms, viz. the Median, Assyrian, and Babylonian. Arbaces retained the supreme power and authority, and fixed his residence at Ecbatana in Media. He nominated governors in Assyria and Babylon, who were honored with the title of kings, while they remained subject and tributary to the Median monarchs. Belesis received the government of Babylon as the reward of his services; and Phul was entrusted with that of Assyria. The Assyrian governor gradually enlarged the boundaries of his kingdom, and was succeeded by Tiglath-pileser, Salmanasar, and Sennacherib, who asserted and maintained their independency. After the death of Esar-haddon, the brother and successor of Sennacherib, the kingdom of Assyria was split, and annexed to the kingdoms of Media and Babylon. Several tributary princes afterwards reigned in Nineveh; but no particular account of them is found in the annals of ancient nations. We hear no more of the kings of Assyria, but of those of Babylon. Cyaxares, king of Media, assisted Nebuchadnezzar, king of Babylon, in the siege of Nineveh, which they took and destroyed, A. A. C. 606.

The most remarkable provinces of Assyria

apachitis, bordering on Armenia. 2.
a mountainous territory, the ancient
the Carduchi, mentioned by Xeno-
Anabasis. 3. Adiabene, in Strabo's
ost considerable province in Assyria.
e, lying between the mountains of
d Zabus Major. 5. Apolloniatis,
the river Gorgus. 6. Settacene, by
ed a portion of Babylonia. 7. Cha-
rated from Media by a branch of
rus.

Letters, a denomination given by
bins and Talmudists, to the characters
ent Hebrew alphabet, as supposing
e been borrowed from the Assyrians
Jewish captivity in Babylon.

n inland town of Liguria, a Roman
the river Tanarus, now called Asti.

Asta Regia, a town of Bœtica,
the mouth of the Bætis, which was
ith mud, north of Cadiz, and sixteen
t from its port. Its ruins show its
ness. Its name is Phœnician, de-
h or arm of the sea. It is said to be
th the present Xeres.

T, a town of Armenia, in Asia, three
be river Aras, and twelve south of
The land about it is excellent, and
ry good wine.

S, a species of the crab insect.

LLOS, a denomination given by Pa-
malignant gangrenous ulcer in the
ned by a mercurial salt in the blood.
lled by him araneus, and ulcus ara-
pider's ulcer.

A, in antiquity, a royal courtier or
the same with Angarus. Darius king
said by Plutarch, in his book on
of Alexander, to have formerly been

LÆ, Astaritæ, or Astarothites, a
to those Jews who worshipped Ash-

E, in ancient geography, a city on
e Jordan; one of the names of Rab-
, in Arabia Petræa.

in pagan mythology. See Ashta-
medal of Cæsa-
, Astarte is repre-
the annexed fi-
ort habit, crown-
lements, holding
Osiris in her right
staff in her left,
COLonia *Prima*
sta Flavia Commodiana, &c.

COL. AVG. FC. CAES. METR. P. SAD

. See Estate.

lde stante ever upon debate,
be siker none *astate*,
, now there, now to, now fro,
now down, the world goth so,
r hath done, and ever shall.
Gower. Con. A. The Prologue.

in the ninth century, the followers
us, who renewed the errors of the
They prevailed much under the
ephorus; but his successor, Michael
, curbed them with very severe laws.

ASTEEP'ING. In steeping. See Steep.

Where Perah's flowers
Perfume proud Babel's bowers,
And paint her wall:
There we lay'd *asteeping*
Our eyes in endless weeping,
For Sion's fall.
P. Fletcher's Poems, p. 163.

ASTEISM, in rhetoric, a pleasant kind of irony, or handsome way of deriding another. Such, *e. g.* is that of Virgil:

Qui Bavium non odit, amet tua carmina, Mavi, &c

ASTELL (Mary) was the daughter of an opulent merchant at Newcastle-upon-Tyne, where she was born about 1668. She was educated in a manner suitable to her station; and amongst other accomplishments was mistress of the French, and had some knowledge of the Latin tongue. Her uncle, a clergyman, observing in her marks of a promising genius, took her under his tuition, and taught her mathematics, logic, and philosophy. She left the place of her nativity when she was about twenty years of age, and spent the remaining part of her life in London and at Chelsea. Here she pursued her studies with great assiduity, made great proficiency in the above-mentioned sciences, and acquired a more complete knowledge of the classics. Among these Seneca, Epictetus, Hierocles, Antoninus, Tully, Plato, and Xenophon were her favorites. She wrote, 1. A Serious Proposal to the Ladies. 2. An Essay in Defence of the Female Sex. 3. Letters concerning the Love of God. 4. Essays upon Marriage, Crosses in Love, and Friendship. 5. Moderation truly stated. 6. The Christian Religion, as professed by a daughter of the Church of England. 7. Bart'lemey Fair, or an Enquiry after wit; and other works. She died in 1731, aged sixty-three, and was buried at Chelsea.

ASTENA, a genus of worms of the mollusca order, in the Linnæan system.

ASTER, in ancient pharmacy, a kind of medicine, invented by Andromachus, against defluxions and divers pains.

Aster, in botany, starwort, a genus of the polygamia superflua order, and syngenesia class of plants; ranking in the natural method under the forty-ninth order, compositæ discoides. The receptacle is naked; the pappus simple; the rays of the corolla ten; and the calyx imbricated. There are above thirty species. All of them may be raised from seed sown either in autumn or spring: but the greater part being perennial plants, and increasing greatly at the roots, are generally propagated by parting their roots early in the spring. They will grow in almost any soil or situation; and the larger sorts increase very fast. They grow best in the shade: the lower kinds do not run so much at the root, but should be taken up and transplanted every other year; which will make them produce much fairer flowers. Some few sorts which are natives of warm climates, will require artificial heat to raise them, if not to preserve them.

Aster, in mineralogy, a species of Samian earth.

ASTERABAD, a small province of Persia, bounded on the west by the Caspian sea, on the south by the districts of Damgan and Bistan, and on the north and east by the river Ashor. This province is the ancient Hyrcania, and the paternal estate of the present king of Persia, as chief of the tribe Kajar, or Kujur which has entire possession of it. The capital is situated on the south-east shore of the Caspian sea, at the mouth of the river Aster, or Ester. It was destroyed by Tamerlane, and is now governed by a descendant of the reigning family of Persia. 300 miles N. N. E. of Ispahan. Long. 54° E., lat. 36° 44′ N.

ASTERAC, or ESTERAC, a ci-devant district of France, in Armagnac, now included in the department of Gers. It is fertile and populous.

ASTERIA, a gem, sometimes called the cat's eye, or oculus felis. It is a very singular and beautiful stone, and somewhat approaches to the nature of the opal, in having a bright included color, which seems to be lodged deep in the body of the stone, and shifts about, as it is moved, in various directions: but it differs from the opal in all other particulars, especially in its want of the great variety of colors seen in that gem, and in its superior hardness. It is usually found between the size of a pea and the breadth of a sixpence; is almost always of a semicircular form, broad and flat at the bottom, and rounded and convex at the top; and is naturally smooth and polished. It has only two colors, a pale brown and a white; the brown seeming the ground, and the white playing about in it, as the fire color in the opal. It is considerably hard, and will take a fine polish, but is usually worn with its native shape and smoothness. It is found in the East and West Indies, and in Europe. The island of Borneo affords some very fine ones, but they are usually small; they are very common in the sands of rivers in New Spain; and in Bohemia they are often found immersed in the same masses of jasper with the opal.

ASTERIA, an extraneous fossil, called in English the star-stone. These fossils are small, short, angular, or sulcated columns, between one and two inches long, and seldom above a third of an inch in diameter: composed of several regular joints; when separated, each resembles a radiated star. They are, not without reason, supposed to be a part of some sea-fish petrified, probably the asterias or sea-star. The asteria is also called astrites, astroites, and asteriscus. They may be reduced to two kinds: those whose whole bodies make the form of a star; and those which in the whole are irregular, but are adorned as it were with constellations in the parts. The asterias spoken of by the ancients appears to be of this latter kind. The quality of moving in vinegar, as if animated, is scarcely perceivable in the astrites, but is signal in the asteria. The former must be broken in small pieces before it will move; but the latter will move, not only in a whole joint, but in two or three knit together. The curious frequently meet with these stones in many parts of England.

ASTERIA, in zoology, a name by which some authors have called the falco palumbarius, or gos-hawk. See FALCO.

ASTERIAS, star-fish, or sea-star, in zoology, a genus of insects of the order of vermes mollusca. It has a depressed body, covered coriaceous coat; is composed of five o segments, running out from a central pa furnished with numerous tentacula; and mouth in the centre. The tentacula re the horns of snails, but serve the animal t with. They are capable of being contra shortened: and it is only at the creatures that they are seen of their full length; a times, no part of them is seen but the ex of each, which is formed like a sort of being somewhat larger than the rest of th Aristotle and Pliny called this genus ασ stella marina, from their resemblance to t tured form of the stars of heaven; and t serted that they were so exceedingly instantly to consume whatsoever they to The fossil world has been greatly enriched fragments and remains of the several pi star-fish which have been converted into See ASTERIA. There are many species genus: some of twelve, thirteen, and eve teen rays. Most of them are found in ou We enumerate the principal: 1. A. caput m or arborescent sea-star, having five rays from an angular body; the rays divide innumerable branches, growing slender a recede from the base. These the anim swimming, spreads like a net; and when ceives any prey within them, draws th again. It is called by some the Magellan fish, and basket-fish. 2. A. clathatra, or lated sea-star, with five short thick rays, beneath, cancellated above, is found coasts, but is rare. 3. A. decacnemos ten very slender rays, with numbers c beards on the sides; the body small, an rounded beneath with ten filiform rays. habits the western coasts of Scotland. 4. cialis, with five rays, depressed, round base, yellow, and having a round striate culum on the back, is the most common; on oysters, and is very destructive to th 5. A. hispida, with five rays, broad, angu top, and rough, with short bristles, is of a color, and found about Anglesea. 6. A. with five smooth rays, dotted or puncture a fine purple color, also found about A 7. A. placenta, with five very broad an braneous rays, extremely thin and flat, about Weymouth. 8. A. spherulata, with tagonal indented body; a small globula between the base of each ray; the rays jointed, taper, and hirsute on their sides; off Anglesea.

ASTERIAS, in ornithology, the ancient the bittern. See ARDEA.

ASTERION, in astronomy, one of th venatici.

ASTERISCUS, in botany, asteriodes thalmum, the ox eye.

AS'TERISK, } Gr. Αστερισκος, a dim
AS'TERISM. } of αστηρ, a star. A
denote a number of stars, a const Asterisk is a character of reference used i ing, resembling a small star.

> Dwell particularly on passages with an aste the observations which follow such a note, you a clear light.
> *Dryden's D*

had filled the skies with *asterisms*, and his-
aging to them; and then astrology devises
d virtues and influences of each.

Bentley's Sermons.

published the translation of the Septuagint
having first compared it with the Hebrew,
l by *asterisks* what was defective, and by
hat was redundant. *Grew.*

RIUS, or Asturius, a Roman consul,
l about A. D. 449. He wrote A Con-
n the Old and New Testament, in Latin
ich is extant, and in which each strophe
in the first verse, an historical fact in
Testament, and in the second an appli-
that fact to some point in the New.

RN. On the stern. See Stern.

left this strait *astern*, we seemed to be come
iver of two leagues broad, unto a large and

e World encompassed by Sir F Drake, 1578.

lley gives her side, and turns her prow,
hose *astern* descending down the steep,
h gaping ways behold the boiling deep.

Dryden.

even in the evening, finding we did not near
and that the Wager was very far *astern*, we
sail, and made a signal for the cruizers to
quadron. *Anson's Voyage*, p. 50.

s is used to signify any thing at some
behind the ship; being the opposite of
hich signifies the space before her. See

ROPÆUS, a Trojan hero, who fought
illes, in single combat, and proved him
lnerable, by wounding him in the right
twithstanding which Achilles slew him.

ROPHYTON, in natural history, a kind
mposed of a great number of cylindric
h branching out into several others, so as
ent the branched stalks of a very intri-

ROPODIUM, a kind of extraneous
the same substance with the asteriæ or
es, to which they serve as a base. See
and Star-stone.

SAN, the ancient county of Asti, a dis-
Upper Italy, bounded by Chieri and
ia on the west, by the Vercellois on
h and east, and by the marquisate of
o on the south. It is a fruitful and po-
territory, about twenty-five miles long
broad, and belongs to the house of Sa-
produces excellent wines, and exports
s parts of Italy large quantities of olives.

TE'S Island, an island to the north-
the gulf of Carpentaria, New Holland,
ng some traces of iron ore, and well

IMA, a frequent, difficult, and short re-
, joined with a hissing sound and a
specially in the night-time, and when
is in a prone posture; because then the
of the lower belly bear so against the
m, as to lessen the capacity of the breast,
the lungs have less room to move. See

, a city of Montserrat in Italy, capital of
ty. It has a bishop's see; is well for-
th strong walls and deep ditches: and is
into the city, borough, citadel, and castle.
There are a great many churches, convents, and other handsome buildings in it. It is seated on the Tanaro, twenty-four miles east of Turin. Population 22,000. The inhabitants carry on a considerable trade in corn, wine, and silk, which is promoted by the situation of the town on the high-road from Alessandria to Turin.

ASTIGI, in ancient geography, a colony, and conventus juridicus, of Bœtica, situated on the Singulus, which falls into the Bætis; called also Colonia Astigitana, and Augusta Firma; now Ecya, midway between Seville and Corduba.

ASTIP'ULATE, } To make an agreement.
Astip'ulation. } See Stipulate.

I do by my royal authority, confirm to persons of monastical religion, and by the consent and *astipulation* of my princes and peers do establish and consign to them that monastery.

Bp. Hall's Polemical Works, p. 187.

Shortly, all, but a hateful Epicurus, have *astipulated* to this truth. *Id. Devotional Works.*

ASTIPULATOR, among the Roman Catholics, he by whose consent and leave a nun takes the religious habit.

ASTLE (Thomas), an English antiquary, was the son of a farmer in Staffordshire. After he had received a liberal education, Mr. Grenville took him under his patronage, and about 1763 gave him a place along with Sir Joseph Ayloffe and Dr. Ducarel, in the superintendance of the Westminster records. In 1766 he was chosen to conduct the printing of the ancient records of parliament; and in 1775 was appointed principal clerk in the record office in the Tower; from which, on the death of Sir John Shelly, he succeeded to the office of keeper of the records. He died in December 1803, and was the author of many curious papers in the volumes of the Archæologia; also of a work entitled Origin and Progress of Writing, as well hieroglyphic as elementary; which was first printed in 1784, 4to, and again in 1803.

ASTLEY (John), a native of Wem in Shropshire, though he studied painting under the same master with Sir Joshua Reynolds, is more memorable as a favorite of fortune, than as a limner. His best pictures are copies of the Bentivoglio's, Titian's Venus, &c. Lady Daniel, having sat to him for her picture, within a week after gave him the original, with the estate of Duckenfield, worth £5000 a year. He died in 1787.

Astley (Philip), the founder of the royal amphitheatre near Westminster Bridge, was born at Newcastle-under-line in 1742, and bred a cabinet-maker. In 1759 he enlisted in the Light Horse, and served seven years in Germany, where he acquired the reputation of a good soldier. On his return home, he began to exhibit equestrian performances; and in 1780 erected a building which he called the amphitheatre riding house, for which he subsequently procured a license. In 1794 Mr. Astley went to the continent as a volunteer in the army. This campaign led to the publication of his Descriptive and Historical Account of the places now the theatre of war in the Low Countries, with plans of fortifications; London, 1794, 8vo; and Remarks on the Profession and Duty of a Soldier. Mr. Astley built amphitheatres at Dublin and at Paris, and the

Olympic Pavilion near the Strand. He closed an active and diversified life at Paris, October 20th, 1814, at the age of seventy-two. Another work of his is entitled A System of Equestrian Education, exhibiting the Beauties and Defects of the Horse, 1800, 4to.

ASTOMI, in anthropology, a people feigned to be without mouths. Pliny speaks of a nation of Astomi in India, who lived only by the smell or effluvia of bodies taken in by the nose!

ASTON (Sir Arthur), a commander in the service of Charles I. was at the head of the dragoons at the battle of Edgehill, and three times defeated the earl of Essex. He was successively governor of Reading and Oxford. He had the misfortune to break one of his legs in such a manner as to make amputation necessary; and, serving in Ireland after the death of the king, when Cromwell took Drogheda, where Aston was governor, his brains were beaten out with his wooden leg.

Aston (Sir Thomas), of an ancient family in Cheshire, was created baronet in 1628, and appointed high sheriff of Cheshire in 1635. He raised a troop of horse for king Charles I., but was defeated and wounded in the vicinity of Nantwich in 1642. He was afterwards made prisoner, and carried to Stafford; and, while endeavouring to make his escape, a soldier struck him on the head, which, with other wounds he had received, brought on a fever, which ended in his death, in 1643. Sir Thomas was author of, 1. A Remonstrance against Presbytery, 1641, 4to; 2. A Short Survey of the Presbyterian Discipline; 3. Brief Review of the Institution, Succession, and Jurisdiction of Bishops.

ASTON'E,
Aston'y,
Aston'ying,
Aston'iedness,
Aston'ish,
Aston'ishedly,
Aston'ishing,
Aston'ishingly,
Aston'ishment,
Astoun'd.

Ang.-Sax. stunian, to stun. Old Fr. *estonne*, to amaze, to excite wonder, surprise; to strike as with thunder, startle, stupify, confound, benumb; to stonny, or, as we say in modern phrase, to petrify. Astound is from the same root, and of a corresponding signification.

> But netheles how that it wende
> He drad hym of his owne sonne
> That maketh hym well the more *astone*.
> *Gower. Con. A.* book vi.

> And with this word she fell to ground
> Aswoune, and there she lay *astound*.
> *Id. ib.* l. iv.

And anoon all the puple seynge Jhesus was *astonyed* and thei dredden, and thei rennynge gretten him. *Wiclif. Mark*, chap. ix.

Be *astonyshed* (O ye heauēs), be afrayde, and abashed at soch a thinge, sayethe the Lord. For my people doue two euels. *Bible*, 1539. *Jeremy*, c. ii.

> Her looks did so *astonish* me,
> And set my heart a quaking;
> Like stag that gaz'd, I was amaz'd,
> And in a stranger taking.
> *Belchier, in Ellis*, vol. iii.

> These thoughts may startle well, but not *astound*,
> The virtuous mind; that ever walks, attended
> By a strong siding champion, conscience. *Milton.*

> Now they lie
> Groveling and prostrate on yon lake of fir
> As we ere while, *astounded* and amaz'd,
> No wonder, fall'n such a pernicious heigh
> *Milton. Paradise*

> Princes, potentates,
> Warriors, the flow'r of heaven, once yours, n
> If such *astonishment* as this can seize
> Immortal spirits.

> But all sate mute,
> Pondering the danger with deep thoughts;
> In other's countenance read his own dismay
> *Astonisht.*

> As when some peasant in a bushy brak
> Has with unwary footing pressed a snake;
> He starts aside, *astonish'd*, when he spies
> His rising crest, blue neck, and rolling ey
> *Dryden*

The palaces of Peru and Mexico were mean and incommodious habitations, if com the houses of European monarchs; yet wh forbear to view them with *astonishment*, who bered that they were built without the use of

> Whence many wearied e'er they had o'erp
> The middle stream (for they in vain have tri
> Again return'd *astounded* and aghast,
> No one regardful look would ever backward
> *Gilb*

> A genius, universal as his theme,
> *Astonishing* as chaos.

> At first, heard solemn thro' the verge of h
> The tempest growls; but as it nearer comes,
> And rolls its awful burden on the wind,
> The lightning's flash a larger curve, and mor
> The noise *astounds*. *Thomson's*

> Unmanly dread invade
> The French *astony'd*. *J.*

Astonishment is that state of the soul in its motions are suspended, with some degree o
Burke on the Sublime and

A character so exalted, so strenuous, so v authoritative, *astonished* a corrupt age, and sury trembled at the name of Pitt, through classes of venality.
Grattan's Character of Lord

ASTORCHA, in botany, a name gi some botanists to the stoechas.

ASTORGA, an ancient city of Spain, kingdom of Leon, with a bishop's see, se the river Tuerto, and well fortified. It st a most agreeable plain, about 160 miles west of Madrid. It is now the chief pla small marquisate, the castle of which it c In its territory lies the lake of Sanabria, which the Tuerto passes with such rapidi agitate the whole surface.

ASTRÆA, in astronomy, a name of Virgo, by others called Erigone, and so Isis.

Astræa, in mythology, the goddess tice, and daughter of Jupiter by The as others say, by Nemesis, the goddess geance. The poets feign that Astræa heaven to reside on earth, in the gold but, growing weary of the iniquities of m she left the earth, and returned to heaven she commenced a constellation of stars, a her orb still looks down on the ways of m

ASTRAGAL, in architecture, a little moulding, which in the orders surrounds of the shaft or body of the column. Its

rived from its resemblance to the bone
el, called astragalos. It is also called
and tondino; it is used at the bottoms
the tops of columns, and on other oc-
it properly represents a ring, on what-
of a column it is placed; and the origi-
of it was that of a circle of iron put
e trunk of a tree used to support an
prevent its splitting. The astragal is
into beads and berries, and is used in
ented entablatures to separate the se-
es of the architrave. See ARCHITEC-

AL, in gunnery, a round moulding
sing a cannon, about half a foot from

AGALOIDES, in botany, the phaca of

AGALOMANCY; from αςραγαλος, and
divination; a species of divination per-
by throwing small pieces, with marks
ding to the letters of the alphabet; the
l disposition of which formed the an-
uired. This kind of divination was
in a temple of Hercules at Achaia.

AGALOTE, in natural history, a species
alum, thus called from its resembling a
ankle-bone; whence it is also denomi-
ure.

AGALUS, in anatomy, the bone of the
e ANATOMY.

ALUS, in botany, milk-vetch, or liquor-
; a genus of the decandria order, and
a class of plants; ranking in the na-
ethod under the thirty-second order,
ceæ, the pod is gibbous and bilocular.
us there are thirty-nine species. 1. A.
a, the common species, grows wild
uncultivated places, and is often re-
ded by Mr. Anderson as proper food
. 2. A. tragacantha, a thorny bush,
in Crete, Asia, and Greece, which yields
tragacanth. This is of so strong a
t a dram of it will give a pint of water
tence of a syrup, which a whole ounce
Arabic is scarce sufficient to do. Hence
r forming troches and the like purposes,
ence to the other gums.

AKHAN, a city and government of the
empire, on the shores of the Caspian,
an independent Tàtarian sovereignty,
ced to a Russian province by the Tzar
siliovich in 1554. It forms a distinct
named after its principal city; having
arated from that of Caucasus, in which
merly included. It is bounded by the
ents of Caucasus, Saratov, Orenburg, the
f the Kirgiz Tartars, the Caspian Sea,
i-devant Persian provinces of Dághistàn
istàn; and contains 12,568 square geo-
l miles. The number of its inhabitants
300,000 to 400,000. Its extent from
est is about 600 geographical miles, and
th to south about 520. The climate is
arm, the thermometer rising in the sum-
158° (Fahrenheit); but the nights are
d the dew very copious. The ice is
strong enough to bear at the end of
er, and is not melted again till February. This is followed by violent storms; but spring soon advances, the ground is covered with flowers, and the whole face of nature changed. The summer is remarkably dry. This government is separated from that of Kazan and the Kozaks of the Ural, by a barren branch of the Uralian chain, which stretches from north to south, and is the only line of hills in this province. The rest of the government is one continued level. The principal rivers, besides the Volga and Ural, are the Akhtuba, running parallel with the Volga, the Manich, the great and little Uzen, the Kuban, the Kuma, lost in the summer months in the sands, the Terek, the Malka, and the Sula. The air in the Steppes is said to be very unhealthy. At a distance from the stream the soil becomes salt and barren, and is covered with drifting sand. There are several salt lakes, such as the Bogdo, Basinskoë, Graznoë, Kobilikha, &c.

On the banks of the Volga rhubarb and liquorice are plentiful, and the extract from the root of the latter is prepared in considerable quantities in the city of Astrakhan. The sea-rose, found near the mouth of the Volga, is here considered as sacred and nutritious. Its flowers have a fragrant smell, and give an essential water of the scent of amber. The shrubs of the Steppes are cherries, sloes, dwarf almonds, and capers. Near the river there are the willow, alder, birch, ash, poplar, elm, and oak; the beech also on the Kuban; but no large woods. The fruit trees are Tatarian mulberries, cherries, apples, pears, plums, apricots, peaches, quinces, and vines; and on the latter there are also figs, almonds, wild olives, Spanish chestnuts, pomegranates, and Cornelian cherries (Cornus mas), which, when pickled, taste like olives. Silk, tobacco, and cotton are plentiful; and the gardens produce all the common roots and herbs. The pasturage is excellent, and much cattle is reared. Sea and rock-salt, natron, epsom-salt, salt-petre-earth, bitumen, and mineral pitch, are also an abundant source of wealth to Astrakhan.

The population of the province is composed of a great number of different nations; Russians, Kozaks, Tartars, Kalmuks, Indians, Persians, Armenians, &c. Generally the military, public officers, merchants, mechanics, and other citizens, are Russians. The garrisons on the Ural consist of Kozaks, derived from those of the Don, who choose their own officers, except their commander, the hetman, or ataman, who is appointed by the Russian government. The Tartars are, excepting a small number, nomad tribes, continually encamped, consisting of about 9000 families. The Kalmuks, about 12,000 families, are of the Derbet tribe, and encamp between the Volga, Don, and Kuma. There are also Armenians, Greeks, Georgians (Gruzinians), Bukharians, Khivinzians, and Hindoos, in considerable numbers, constantly inhabiting the city, to say nothing of the Europeans who are generally to be found there. Some colonies, established on the Terek and Kuma in 1781, cultivate grain, gardens, and vineyards, and produce a considerable quantity of silk. The number of their villages amounted to fifty-three in 1796.

ASTRAKHAN, the capital of the above government, (called originally Hájé Terkhàn, the

Giterchan, or Ginterchan, of the middle ages), is situated in E. long. 48° 2′ 15″, N. lat. 46° 21′ 12″, and is one of the most populous and important cities, ranking as the third town, perhaps, of the Russian empire. It contains nearly 70,000 inhabitants. It stands on a hill, in a long narrow island of the Volga, about thirty miles from its entrance into the Caspian, surrounded by swamps, which in spring are very unhealthy. The town itself, without including the suburbs, is from six to eight miles in circumference. The houses are built principally of brick and sand-stone. Here is an old Tatar castle, or kreml, and the Beloï-Gorod (white tower), built by the tzar, Michael Feodorovich, now in ruins; a cathedral, archbishop's palace, public offices, main guard, arsenal, and powder magazine. Belgorod, which adjoins the kreml, on the same hill, is 2510 feet long, 1440 feet broad, and 7110 feet in circumference. The city has four gates, and some ruined walls. The streets are ill paved, and much exposed to inundations. Between the kreml and the canal, on the Volga, is the dock-yard, on the other side of which are the Tatarian and Armenian suburbs (slobods), and barracks for the troops. The exchange, where ships from the Caspian unlade and land their goods, is not far from St. Nicolas's Gate, and opposite to it is the haven for vessels coming down the river. Within the suburbs are about 100 vineyards, thirty of which belong to the crown; a school for the artillery, a bank, and court of justice, in what was formerly the Troïtzkoï convent; and, in the Belograd, the Spasso-preobrashenski convent, two parish churches, two hospitals, and a bázàr for the use of the Armenians and Hindoos.

The variety of nations and religions in Astrakhan is manifested by the number and difference of the places of worship. The total of them is fifty-seven: twenty-three Russian churches of the Greek communion; twenty-seven Tatarian mosques, churches, and temples; four Armenian, two Roman Catholic, one Lutheran, and one Hindoo temple. There is also a handsome hospital dedicated to St. Paul, and six monasteries; several dyeing-houses, brick-fields, tallow-candle manufactories, one iron-foundry, and looms for weaving linen, veils, and sashes. The morocco leather manufactured here is most esteemed, next to the Turkish; especially the red. There is also an establishment here for rearing silk-worms, and a botanic garden. European goods are brought either by water from Petersburgh, or, on sledges, by land from Moscow, and are shipped across the Caspian, or conveyed to Mozdok, in Mount Caucasus. The merchants engaged in this trade employ 250 vessels of different tonnage. More than half of the whole trade carried on is in the hands of the Armenians. Many of the Russian merchants employ their vessels in trading voyages to Persia, Khiva, or Bukhárà, or carrying stores to Kizliær, and salt, for the crown, to the towns on the Volga. The Hindoo merchants generally quit their native country at an early age, setting out with a small capital, which they soon increase by trade on their way through Tatary and Persia; and make enormous profits by letting the Tatars of Astrakhan have their goods on credit; so that latter are always deeply in their debt.

The imports from Persia and Bukhárà co of raw silk, about 120,000 lbs. yearly, wool, woollens, madder, galls, morocco leather, ch dyed linens, silks, gauzes, small carpets, cou panes, frankincense, bezoar, naphtha, rice, d skins, lamb-skins, Circassian cloth, tu (pelisses), mountain-honey, tobacco, co gowns, Persian peas, dried fruits, almonds, f pomegranates, olives, oil, saffron, dried peach and spices. The exports consist almost entir of foreign manufactures; such as velvet, cochine satin, plush, linen, and other woven articl sugar, Russia-leather, iron, dyeing substanc glass, coral, steel and iron wares, metal utens wrought gold and silver, wax, soap, trink alum, quick-silver, vitriol, sal-ammoniac, &c. Caravans often arrive by land at Astrakhan from Bukhárà and Khiva. The Indian trade alone is from 6 to 700,000 roubles (£120 to 140,000) annually. The silk-manufactures are said to employ from 3 to 400,000 (£60 to 80,000). The supplies sent to the Caucasian lines along the Terek, from 4 to 500,000 (£100 to 120,000). The prices of all internal produce are low. Little is known concerning the origin of Astrakhan or of its condition before the thirteenth century, when William de Rubruguis found it a village without any fortifications; but, at the close of that century, it was a considerable emporium for the trade with India and China; and completely ruined by Timur. It was still a mere village when Josaphat Barbaro saw it in the fifteenth century; but Ambrosio Contareni, the Venetian ambassador, in the latter end of that century, found a considerable trade in rice and silk carried on there. The conquest of it, by the tsar Ivan Vasiliovich, in 1554, was therefore very advantageous to Russia, as it gave her the command not only of the Volga, but also of the Caspian, an advantage which she has not neglected to improve.

ASTRALISH, among miners, is the ore gold in its first state.

ASTRANTIA, Masterwort, in botany, genus of the digynia order, and the pentand class of plants; ranking in the natural meth under the forty-fifth order, umbellatæ. The in volucrum is lanceolated, open, equal, and co lored. The species are two: 1. A. major, A. minor, both natives of the Alps, and posses ing no remarkable properties.

ASTRAPÆA, in natural history, a na given by the ancients to a stone, since call improperly, astrapia, and by some astrapias. was of a blue, or blackish ore, with white var gations, running in the form of waves and clou Some specimens of the Persian lapis lazuli are this kind, but they are rare.

ASTRARII, in writers of the middle a the same with mansionarii, those who live the house or family, at the time when a pers dies.

ASTRARIUS Hæres; from astre, old Fren a hearth; is used in our old writers, where ancestor, by conveyance, hath set his heirs parent, and his family, in a house in his time.

". According to Tooke, the past
Ang.-Sax. verb stragan, to stray, to

ay, beseech thy God on knee,
t thy stagg'ring steppes alway;
h every secrete thought doth see,
thee in, when thou wouldst goe *astray*.
Gascoigne.

labour may
lead *astray*,
eart that constant shall remain,
d I the while
ll sit and smile,
e you spend your time in vain.
George Wither, in Ellis, v. i.

ness and doubt are now flying away,
er I roam in conjecture forlorn.
on the traveller, faint, and *astray*,
ght and the balmy effulgence of morn.
Beattie's Hermit.

T', v. & *adj.*
ION,
IVE,
E,
ENTLY,
ENT, n. & *adj.*

Astringo, astrictum, astringere, to contract. To make strait or narrow, to heighten or draw close, to bind; op-
lax.

caused by a contraction of the spirits of
which contraction, by consequence, *astrin-*
sture of the brain, and thereby sendeth
e eyes. *Bacon.*

e requireth an *astriction*; but such an
is not grateful to the body: for a pleas-
doth rather bind in the nerves, than
and therefore such *astriction* is found in
arsh taste. *Id.*

is very *astringent*, and therefore of slow
Id. Natural History.

inisheth sensible perspiration, encreaseth
e; for that reason, a strengthening and
t often conduceth to this purpose.
Arbuthnot on Aliments.

parts were to be relaxed or *astricted*, as
humours pass, either in too small or too
ties. *Id.*

ubstances are proper for dry atrabilarian
; who are subject to *astriction* of the belly,
Id. on Diet.

d, austere and bitter substances, by their
create horrour; that is, stimulate the
Id.

medicines are binding, which act by the
their particles; whereby they corrugate
es, and make them draw up closer.
Quincy.

ION, in law. See Thirlage.

ION, in medicines, the operation of
medicines.

CUS Lapis, in natural history, a kind
stone, broken or cut from the enastros,
ame manner as the trochitæ, from the

YE,
DLE.

On stride, on straddle. See Stride, and Straddle.

lay their native arms aside,
r modesty; and ride *astride*. *Hudibras.*

lace, where the Rhone is so straitened
rocks, that a man may stand *astride* upon
. *Boyle.*

D, in ornithology, a species of the

ENTS, in the materia medica, sub-
tinguished by a rough austere taste,

and changing solutions of iron, especial
made in the vitriolic acid, into a dark purple
black color; such as galls, tormentil root, bistort root, balaustines, terra japonica, acacia, &c.

ASTROBOLISM; from αϛηρ, a star, and βαλλω, to strike; the same with sphacelus; though properly applied to plants which are destroyed in the dog-days, as if blasted by that star.

ASTROCHITES, or Astroites. See Asteria.

ASTROGNOSIA; from αϛηρ, star, and γινωσκω, I know; the art of knowing the fixed stars, their names, ranks, situations in the constellations, and the like. See Astronomy.

AS'TROLABE,
As'trolabre,
As'trolaby.

Gr. αστηρ, a star, and λαμβανω, I take.

The firste partye of this treatise shall rehearse the figures, and the membres of thine *astrolaby*, because that thou shalt have the greater knowyng of thyne owne instrument. *Chaucer. Astrolabie*, f. 262. c. i.

For I have ben toward the parties of Braban, and beholden the *astrolabre*, that the sterre that is clept the transmontayne, is 53 degrees highe.
Sir John Maundeville.

Liv'd Tycho now, struck with this ray which shone
More bright i' the morn, than others beam at noon,
He'd take his *astrolabe*, and seek out here
What new star 'twas did gild our hemisphere.
Dryden. On the Death of Lord Hastings.

Astrolabe, among the ancients, was the same as our armillary sphere.

Astrolabe, among the moderns, is used for a planisphere, or a stereographic projection of the sphere, either upon the plane of the equator, the eye being supposed to be in the pole of the world, or upon the plane of the meridian, at the time the eye is supposed in the point of the intersection of the equinoctial and horizon.

ASTRO'LOGY,
Astro'loger,
Astro'logian,
Astro'logick,
Astro'logicall,
Astrolo'gically.

Αϛηρ, a star, and λογος, a discourse; from λεγω, I say. In Latin writers, astrology was synonymous with, and more in use than, astronomy. This usage has been imitated by our elder writers.

On which was written, not in words,
But hieroglyphic mute of birds;
Many rare pithy saws concerning,
The worth of *astrologic* learning.
Butler's Hudibras, part i. can. 3.

A worthy *astrologer*, by perspective glasses, hath found in the stars many things unknown to the ancients. *Raleigh.*

Not unlike that, which *astrologers* call a conjunction of planets, of no very benign aspect the one to the other. *Wotton.*

Some seem a little *astrological*; as, when they warn us from places of malign influence. *Id.*

No *astrologick* wizard honour gains,
Who has not oft been banish'd, or in chains.
Dryden.

A happy genius is the gift of nature: it depends on the influence of the stars, say the *astrologers*; on the organs of the body, say the naturalists; it is the particular gift of heaven, say the divines, both Christians and heathens. *Id.*

Astrologers, that future fates foreshew. *Pope.*

I never heard a finer satire against lawyers, than that of *astrologers*; when they pretend, by rules of art, to tell when a suit will end, and whether to the advantage of the plaintiff or defendant. *Swift.*

I know, the learned think of the art of *astrology*, that the stars do not force the actions or wills of men. *Id.*

Astrological prayers seem to me, to be built on as good reason, as the predictions. *Stillingfleet.*

The poetical fables are more ancient than the *astrological* influences; that were not known to the Greeks, till after Alexander the Great. *Bentley.*

The twelve houses of heaven, in the form which *astrologians* use. *Camden.*

Astrology; from *αϛηρ*, a star, and λογος, discourse; was long considered as a science, by which future events could be foretold, from the aspects and positions of the heavenly bodies. In the literal sense of the term, astrology should signify no more than the doctrine or science of the stars; which was its original acceptation, and made the ancient astrology; though, in course of time, an alteration has arisen: that which the ancients called astrology, being afterwards termed astronomy. Astrology may be divided into two branches, natural and judicial.

Astrology, Judicial or Judiciary, is what we commonly call simple astrology, that which pretends to foretel moral events, i. e. such as have a dependence on the free will and agency of man; as if they were directed by the stars. This art, which owed its origin to the practices of knavery on credulity, is now universally exploded by the intelligent part of mankind. The professors of this kind of astrology maintain, 'That the heavens are one great volume or book, wherein God has written the history of the world; and in which every man may read his own fortune, and the transactions of his time.—The art, they say, had its rise with the science of astronomy. While the ancient Assyrians, whose serene unclouded sky favored their celestial observations, were intent on tracing the paths and periods of the heavenly bodies, they discovered a constant settled relation of analogy between them and things below; and hence were led to conclude these to be the parcæ, the destinies, so much talked of, which preside at our births, and dispose of our future fate. The laws therefore of this relation being ascertained by a series of observations, and the share each planet has therein; by knowing the precise time of any person's nativity, they were enabled, from their knowledge in astronomy, to erect a scheme or horoscope of the situations of the planets, at that point of time; and hence, by considering their degrees of power and influence, and how each was either strengthened or tempered by some other, to compute what must be the result.' Such are the arguments of the astrologers in favor of their science. The chief province now remaining to the professors of this art, is the making of calendars or Almanacks; and the prodigious sale of Moore's almanack, in this country, is no small proof of the popular belief in this subject.

Judicial astrology is commonly said to have been invented in Chaldea, and thence transmitted to the Egyptians, Greeks, and Romans; though some will have it of Egyptian origin, and ascribe the invention to Ham. But it is to the Arabs we owe it. At Rome the people were so infatuated with it, that the astrologers, or, as they were then called, the mathematicians, maintained their ground notwithstanding the edicts of the emperors to expel them out of the city. Domitian, in spite of his hostility to this art, trembled at its denouncements. They prophesied the year, the hour, and the manner of his death; and agreed with his father in foretelling, that he should perish, not by poison, but by the dagger. On the evening of his assassination he spoke of the entrance of the moon into Aquarius on the morrow. 'Aquarius,' he said, 'shall no longer be a watery, but a bloody sign; for a deed shall there be done, which shall be the talk of all mankind.' The dreaded hour of eleven approached. His attendants told him it was passed, and he admitted the conspirators and fell. *Suet. in Domit.* 16.

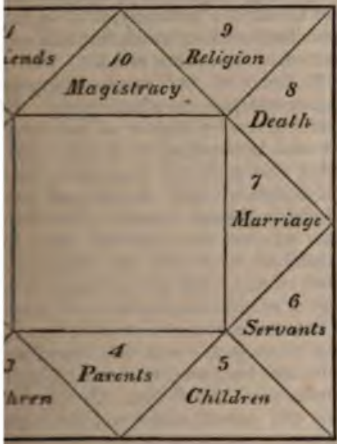
The Brahmins, who introduced and practised this art among the Indians, have hereby made themselves the arbiters of good and evil hours, which gives them great authority; they are consulted as oracles; and have taken care never to sell their answers but at good rates. The same superstition has prevailed in more modern ages and nations. The French historians remark, that in the time of Catherine de Medicis, astrology was so much in vogue, that the most inconsiderable thing was not to be done without consulting the stars. And in the reign of king Henry III. and IV. of France, the predictions of astrologers were the common theme of the court conversation. This predominant humor in that court was well rallied by Barclay, in his Argenis, on occasion of an astrologer, who had undertaken to instruct king Henry in the event of a war then threatened by the faction of the Guises.

Little is known of the early history of astrology in England. Bede and Alcuin, among our Anglo-Saxon ancestors, were addicted to its study; and Roger Bacon could not escape the imputation of the art. His imprisonment was owing, it is well known, to his being supposed skilful in it. But it was the period of the Stuarts which must be considered as the acme of astrology among us. Then Lilly drank the doctrine of the magical circle, and the invocation of spirits from the Ars Notoria of Cornelius Agrippa; used the form of prayer prescribed therein to the angel Salmonœus; and entertained among his familiar acquaintance the guardian spirits of England, Sammael and Malchidael. *Merlin Anglicus*, 1647. The author of Waverley has made ample use of this promising character in his tales relative to this period.

The signs of astrology were primarily divided thus: the six first were called northern and commanding; the six last southern, an obeying. Next they were distributed into fo triplicities, (so called because three belonged t each), fiery, earthy, airy, and watery. Of the the fiery and airy were said to be masculine, th earthy and watery, feminine. The planets b their motion made several aspects. See Aspect The remaining influential parts of the heav were two, Dragon's Head and Tail, that, is th nodes in which the ecliptic is intersected b the orbits of the planets; and the Part of Fo

is the distance of the moon's plane
m, added to the degrees of the ascen-

uences of the heavenly bodies being
, it remained only, in each separate
erve their positions at some required
or upon this, and their aspect to each
esolution of any question depended.
rpose the whole circle of the heavens
uted into twelve parts or houses, by
s drawn through the intersection of
and meridian, and cutting the equa-
any equal parts. The first house was
ectly east, and the remainder were
und in order proceeding to the south
o the motion of the planets. To each
uses was assigned some peculiar go-
according to the scheme below.



ainder of the art consisted in accu-
g the scheme by an observation, and
g from it an oracular response.
evolution astrology declined; and not-
g the labors of the immortal Par-
, and those of Ebenezer Sibley, which
days fill two 4to. volumes, the art
e considered as exploded.

GY, NATURAL, is the predicting of
ffects from natural causes; as, the
weather, winds, storms, hurricanes,
floods, earthquakes, &c. This art
elongs to physiology, or natural philo-
d is only to be deduced a posteriori,
omena and observations.

LOMA, in botany; from αϛρον, a
ωμα, a fringe, alluding to the five tufts
hich form a star, near the bottom of
f the flower, internally. Brown Prodr.
v. i. 538. Class and order, pentan-
gynia. Nat. ord. Ericæ Juss. Epa-
own.

. CAL. perianth inferior, permanent,
nner of five elliptic-lanceolate, acute,
ct leaves; outer of four or more, much
oncave, imbricated scales: COR. of one
lar; tube twice the length of the calyx, inflated, furnished on the inside, near the base, with five tufts of soft hairs; limb in five deep, spreading, lanceolate, acute, hairy segments, shorter than the tube. Nectary a cup-shaped undivided gland, surrounding the base of the germen: STAM. filaments five, linear, inserted into the tube, and enclosed within it; anthers oblong, in the mouth of the tube: PIST. Germen superior, roundish, of five cells; style capillary, the length of the tube; stigma 'globose, densely downy:' PERIC. drupa globular, slightly juicy: SEED, nut of five cells, hard and solid, not bursting, with a pendulous oblong kernel in each cell.

Ess. ch.: outer calyx of several imbricated leaves: corolla tubular: tube swelling, twice as long as the calyx, with five internal tufts of hair at the base: tube shorter, spreading, bearded: filaments linear, within the tube: drupa almost dry, of five cells. This genus is closely related to stenanthera, as well as to melichrus. We might perhaps unite them all to styphelia.

Astroloma consists of shrubs, of humble stature, for the most part decumbent: leaves scattered, often ciliated: flowers axillary, erect. There are six species: 1. A. humifusum, diffuse astroloma; stem prostrate, much branched. Found in various parts of New Holland, on the south-west coast, as well as at Port Jackson and in Van Diemen's island. The remaining five species have all been found in the southern part of New Holland, by Mr. Brown, and apparently by no other botanist. We give their names from his work: 2. A. prostratum, prostrate astroloma; 3. A. denticulatum, toothed astroloma; 4. A. pallidum, pale astroloma; 5. A. compactum, compact astroloma; 6. A. tectum, upright astroloma.

ASTROLUS, in natural history, a name given by authors to a white and splendid stone, small in size, and of a roundish figure, resembling the eyes of fishes.

ASTROMETEOROLOGIA, the art of foretelling the weather, and its changes, from the aspects and configurations of the moon and planets. It is a species of astrology, sometimes called meteorological astrology.

ASTRONIUM, in botany, a genus of the pentandria order, and the diœcia class of plants. The male calyx consists of five leaves, and the corolla is quinquepetalous. Of the female the calyx and corolla are the same as in the male; the styli are three, and the seed is single. There is but one species, viz. A. graveolens, a native of Jamaica.

ASTRONOMICAL CALENDAR, an instrument engraved on copper plates, printed on paper, and pasted on a board, with a brass slider carrying a hair: it shows by inspection the sun's meridian altitude, right ascension, declination, rising, setting, amplitude, &c. to a greater degree of exactness than the common globes.

ASTRONOMICAL PLACE of a star, or planet, is its longitude, or place in the ecliptic, reckoned from the beginning of Aries in consequentia, or according to the natural order of the signs.

ASTRONOMICALS, a name used by some writers for sexagesimal fractions; on account of their use in astronomical calculations.

ASTRONOMY.

ASTRO'NOMY,
Astronomick,
Astronom'ical,
Astronomically,
Astron'omer,
Astron'omize.
From αστηρ, a star, and νομος, a law.

Images *astronomically* framed under certain constellations to preserve from several inconveniences, as under the sign of the Lion the figure of a lion made in gold, against melancholic fancies, dropsie, plague, fevers. *Bp. Hall's Cases of Conscience.*

Our forefathers, marking certain mutations to happen in the sun's progress through the zodiack, they registrate and set them down in their *astronomical* canons. *Brown's Vulgar Errors.*

The old ascetick Christians found a paradise in a desert, and with little converse on earth, held a conversation in heaven; thus they *astronomized* in caves; and though they beheld not the stars, had the glory of heaven before them. *Brown. Chris. Mor.* ii. 9.

Astronomers no longer doubt of the motion of the planets about the sun. *Locke.*

The old and new *astronomers* in vain
Attempt the heav'nly motions to explain.
Blackmore.

Can he not pass an *astronomick* line,
Or dreads the sun th' imaginary sign;
That he should ne'er advance, to either pole? *Id.*

To this must be added the understanding of the globes, and the principles of geometry and *astronomy*. *Cowley.*

INTRODUCTION.

Sect. I. Etymology and Definition of Astronomy.

1. Astronomy, a mixed mathematical science, teaching the knowledge of the celestial bodies; their magnitudes, distances, motions, revolutions, and eclipses: and it comprehends also a knowledge of the natural causes on which all celestial phenomena depend. Hence it is as much a branch of physics as of mathematics, and comprehends the theory of the universe.

Sect. II. History of Astronomy.

2. As Astronomy is the most sublime of all the sciences, so it is also the most useful, the most ancient, and, we may add, the most perfect. How can it be otherwise than sublime, when its object is the study of that theatre which our merciful Creator has vouchsafed to establish as an unerring testimony of his existence and his power. Wherever we turn we perceive immensity of operation, guided by the strictest regularity. We find revolutions, intricate and complex, but resolving themselves, by laws irrevocably fixed, into paths the most simple, and the most capable of suffering an increase of numbers without confusion. In another point of view it is sublime: the contemplation of its discoveries and its usefulness would convince the dreary-minded bigot, who sneers at human reason and its efforts, of the amazing extent to which that noblest gift of God to man can be extended. Astronomy is the proudest triumph of philosophy and of human reason. Its superior usefulness when compared with the other sciences can never be opposed: by it the navigator is conducted through unknown seas with safety; and the merch transports the produce or the surplus of nation to increase the comforts or relieve wants of another; in short, it affords the m of intercourse to all the inhabitants of the gl If, from the folly of mankind, it has somet been compelled to effect the transportati animosity and destruction, it has more frequ assisted the dissemination of arts, civili and happiness. That it is the oldest science shall more clearly ascertain when we trace, we shall soon do, its history through the m ancient, and its improvements through the m modern, nations. If then astronomy is pos of the highest antiquity, the greatest usefu and the utmost sublimity, it is an object of t most transcendant worth that can occupy the tention of the human mind.

3. None of the sciences appear to be o higher antiquity than astronomy. From the ac count given by Moses of the creation of th celestial luminaries, it appears extremely pro bable that our first progenitor received som knowledge of their nature and uses from hi Almighty Creator himself. The Jewish rabbi have adopted this opinion: and, indeed, it i natural to think that no visible objects wou more readily excite the curiosity, or appear mo worthy of the contemplation of Adam in a st of innocence, than the celestial bodies.

4. Consistently with this, Josephus ascribes t Seth and his posterity a considerable degree o astronomical knowledge. He speaks of two pil lars, the one of stone and the other of brick, called the pillars of Seth, upon which were en graved the principles of the science; and h says that the former was still entire in his time But, be this as it may, it is evident that the grea length of the antediluvian lives would affor such excellent opportunities for observing th heavenly bodies, that we cannot but suppos that the science of astronomy must have bee considerably advanced before the flood. Jos phus says, that longevity was bestowed upo them for the very purpose of cultivating th sciences of geometry and astronomy; observing that the latter could not be learned in less tha 600 years: 'for that period (he adds) is th grand year.'

5. By this remarkable expression is probabl meant the period in which the sun and moo come again into the same situation in whic they were at the beginning of it, with regard t the nodes, apogee of the moon, &c. 'This pe riod (says Cassini), of which we find no intima tion in any monument of any other nation, i the finest period that ever was invented: for i brings out the solar year more exactly than tha of Hipparchus and Ptolemy; and the luna month within about one minute of what is dete mined by modern astronomers.' If the anted luvians had such a period of 600 years the must have known the motions of the sun an moon more exactly than their descendants kne them for many ages after the flood. That r markable expression in the book of Job, in wh

is spoken of as the being who 'maketh
Orion, and the chambers of the south,'
king to be overlooked.

ed, besides the motives of mere cu-
hich of themselves may be supposed to
ted people to a contemplation of the
celestial canopy, it is easy to see that
ts of the science answer such essential
to mankind that they could not long be
l with. And it has been remarked that
this science, in different degrees of im-
nt, have been found among all nations.

on the building of the Tower of Babel,
posed that Noah retired with his chil-
n after the flood, to the north-eastern
sia, where his descendants peopled the
ire of China. It is said also that the
issionaries have found traditional ac-
mong the Chinese of their having been
is science by their first emperor Fo-hi,
pposed to be the same with Noah; and
asserts that Fo-hi discovered the mo-
the heavens, divided time into years and
and invented the twelve signs, into
ey divide the zodiac, and which they
sh by the following names: 1. the
2. the ox or cow; 3. the tiger; 4. the
. the dragon; 6. the serpent; 7. the
. the sheep; 9. the monkey; 10. the
hen; 11. the dog; and 12. the boar.
vide the heavens into twenty-eight con-
s, or classes of stars, allotting four to
the seven planets; so that the year
egins with the same planet; and their
tions answer to the twenty-eight lunar
s used by the Arabian astronomers.

ey do not, however, mark these constel-
with the figures of animals, like most
tions, but by connecting the stars by
lines, and denoting the stars themselves
circles: so, for instance, the great bear
marked as represented in plate IV.

e Chinese themselves have many re-
the high antiquity of their astronomy;
not without suspicion of great mistakes.
ribe the discovery of the pole-star, the
of the sphere, and mariners' compass,
eir emperor Hong-Ti, the grandson of
But on more certain authority it is as-
y Gaubil that, at least 120 years before
he Chinese had determined by observa-
number and extent of their constella-
they now stand; the situation of the
rs with respect to the equinoctial and
points; and the obliquity of the eclip-
the theory of eclipses; and that they
ng before that, acquainted with the true
f the solar year, the method of observing
altitudes of the sun by the shadow of
n, and of deducing from thence his de-
and the height of the pole.

he same missionary also says that the
have yet remaining some books of astro-
hich were written about 200 years be-
rist; from which it appears that the
knew the daily motion of the sun and
and the time of the revolutions of the
many years before that period. Du Halde informs us that Tcheou-cong, the most skilful astronomer that ever China produced lived more than a thousand years before Christ, that he passed whole nights in observing the celestial bodies and arranging them into constellations, &c. At present, however, the state of astronomy is but very low in that country, although it is cultivated at Pekin by public authority, as in most of the capital cities of Europe. This is ascribed, by Dr. Long, to a barbarous decree of one of their emperors, to burn all the books in the empire excepting such as related to agriculture and medicine.

11. Astronomy, according to Porphyry, must have been of very ancient standing in the East. He informs us that when Babylon was taken by Alexander there were brought from thence celestial observations for the space of 1903 years; which therefore must have commenced within 115 years after the flood, or within fifteen years after the building of Babel. Epigenes, according to Pliny, affirmed that the Babylonians had observations of 720 years engraven on bricks.

12. Achilles Tatius ascribes the invention of astronomy to the Egyptians; and adds that their knowledge of that science was engraven on pillars, and by that means transmitted to posterity. Bailly, in his elaborate History of Ancient and Modern Astronomy, endeavours to trace the origin of this science among the Chaldeans, Egyptians, Persians, Indians, and Chinese, to a very early period; and he maintains that it was cultivated in Egypt and Chaldea 2800 years before Christ; in Persia, 3209; in India, 3101; and in China, 2952 years before that era. He also apprehends that astronomy had been studied even long before this distant period, and that we are only to date its revival from thence.

13. M. Bailly, in investigating the antiquity and progress of astronomy among the Indians, examines and compares four sets of astronomical tables of the Indian philosophers, viz. that of the Siamese, explained by M. Cassini in 1689; that brought from India by M. le Gentil, of the Academy of Sciences; and two other manuscript tables, found among the papers of M. de Lisle: all of which agree together, and refer to the meridian of Benares. It appears that the fundamental epoch of the Indian astronomy is a conjunction of the sun and moon which took place at the distance of years 3102 A. A. C. And M. Bailly computes that such a conjunction really then happened.

14. He farther observes that at present the Indians calculate eclipses from observations made 5000 years ago; the accuracy of which, with regard to the solar motion, far exceeds that of the best Grecian astronomers. The lunar motions have been computed from the space through which that luminary passes in 1,600,984 days. They also use the cycle of nineteen years, the same as that ascribed by the Greeks to Meton. Their theory of the planets is better than that of Ptolemy, as they do not suppose the earth to be the centre of the celestial motions, and believe that Venus and Mercury move round the sun. Their astronomy also agrees with the most modern discoveries, with regard to the obliquity of the ecliptic and the acceleration of the

equinoctial points, &c. The inhabitants of Japan, of Siam, and of the Mogul's empire, have also been acquainted with astronomy from time immemorial; and the celebrated observatory at Benares is a monument both of the ingenuity of the Hindoos, and of their skill in that science.

15. In the Transactions of the Royal Society of Edinburgh, vol. ii, professor Playfair has given a learned and ingenious dissertation on the astronomy of the Brahmins, in which the great accuracy and high antiquity of the science among them is rendered extremely probable. It appears that their tables and rules of computation have peculiar reference to an epoch, and to observations 3000 or 4000 years A. C. It appears, too, that very considerable mathematical knowledge had been employed in their precepts and calculations. But amongst all these precepts and those calculations, perhaps none will strike the mind of the reader with greater force than the following, from which we shall find, without plucking a leaf from the never-fading laurels of Sir Isaac Newton, that the principle which he developed to the western world, was discovered by the philosophers of the eastern, thousands of years before he existed: of the truth of this the following remarkable passage, translated by Sir William Jones, from the poem of Shirin and Ferhad: 'there is,' says the author of that poem, 'a strong propensity which dances through every atom and attracts the minutest particle to some peculiar object; from such propensity arises every motion perceived in heavenly or terrestrial bodies. It is a disposition to be attracted which taught hard steel to rush from its place and rivet itself on the magnet; it is the same disposition which impels the light straw to attach itself firmly on amber.'

16. We shall conclude this part of the history of Asiatic discoveries in the words of professor Playfair: 'That observations made in India, when all Europe was barbarous or uninhabited, and investigations into the most subtle effects of gravitation made in Europe near five thousand years afterwards, should thus come in mutual support of one another, is perhaps the most striking example of the progress and vicissitudes of science, which the history of mankind has yet exhibited.'

17. It appears too, that astronomy was not unknown to the Americans; though in their division of time they made use only of the solar and not of the lunar motions. The Mexicans, in particular, had a strange predilection for the number thirteen: their shortest periods consisted of thirteen days; their cycle of thirteen months, each containing twenty days; and their epoch of four periods of thirteen years each. This excessive veneration for the number thirteen arose, according to Siguenza, from its being the number of their greater gods. Clavigero also asserts it as a fact, that having discovered the excess of a few hours in the solar above the lunar year, they made use of intercalary days to bring them to an equality, as was done by Julius Cæsar in the Roman calendar—but with this difference, that instead of one day every four years, they interposed thirteen days every fifty-two years.

18. Among the ancients we find the name of Chaldean used often for astronomer or astrologer. Indeed both these nations pretended to a very high antiquity, and claimed the honor of producing the first cultivators of this science. The Chaldeans boasted of their temple or tower of Belus, and of Zoroaster, whom they placed 5000 years before the destruction of Troy; while the Egyptians boasted of their colleges of priests, where astronomy was taught, and of the monument of Osymandias, in which, it is said, there was a golden circle of 365 cubits in circumference, and one cubit thick, divided into 365 equal parts, according to the days of the year, &c. It is indeed evident that both Chaldea and Egypt were countries very proper for astronomical observations, on account of the extended flatness of the country, and the purity and serenity of the air. The tower of Belus, or of Babel itself, was probably an astronomical observatory; and the pyramids of Egypt, whatever they were originally designed for, might perhaps answer the same purpose; at least they show the skill of this people in practical astronomy, as they are all placed with their four fronts exactly facing the cardinal points of the compass.

19. The Chaldeans began to make observations soon after the confusion of languages, as appears from the observations found by Alexander on the taking of Babylon; and it is probable they began much earlier. They determined, with tolerable exactness, the length both of a periodical and synodical month. They discovered that the motion of the moon was not uniform; and they even attempted to assign those parts of the orbit in which the motion is quicker or slower. We are assured by Ptolemy that they were not unacquainted with the motion of the moon's apogee and nodes, the latter of which they supposed made a complete revolution in 6585⅓ days, or a little more than eighteen years, and contained 223 complete lunations, which period is called the Chaldean Saros.

20. Ptolemy also gives us from Hipparchus several observations of lunar eclipses made at Babylon above 720 years A. A. C.; and Aristotle informs us that they had many occultations of the planets and fixed stars by the moon; a circumstance which led them to conceive that eclipses of the sun were to be attributed to the same cause. They had also no inconsiderable share in arranging the stars into constellations, and the comets did not escape their observation. Dialling was also practised among them long before the Greeks were acquainted with that science.

21. The Egyptians were much of the same standing in astronomy with the Chaldeans. Herodotus ascribes their knowledge in the science to Sesostris; but probably not the same whom Newton makes contemporary with Solomon, as they were acquainted with astronomy at least many hundred years before that era. We learn from the testimony of some ancient authors, that they believed the figure of the earth was spherical; that the moon was eclipsed by passing through the earth's shadow, though it does not certainly appear that they had any knowledge of the true system of the universe; that they attempted to measure the magnitude of the earth and sun,

their methods of ascertaining the latter y erroneous; and that they even pretend- etel the appearance of comets, as well as kes and inundations. This science, how- dually decayed, and in the time of Au- was entirely extinct among them.

stronomy passed from Chaldea and Egypt hœnicians, and was applied by that com- people to the purposes of navigation; , in consequence, became masters of the of almost all the commerce in the world. eks, it is probable, derived their astrono- owledge chiefly from the Egyptians and ans, by means of several of their country- o visited these nations for the purpose of the different sciences. Newton sup- at the division into constellations was out the time of the Argonautic expedi- t it is probable that most of them were ch older date, and derived from other though clothed in fables of their own in-

he fable of Atlas supporting the heavens shoulders, shows that some Mauritanian of that name had made considerable ad- astronomical knowledge; and his dis- had probably been communicated to the Several of the constellations are men- y Hesiod and Homer, who lived about 870. Their knowledge in this science , was greatly improved by Thales the , and other Greeks, who travelled into nd brought from thence the chief prin- the science. Thales was born about 640, and he was the first among the ho observed the stars, the solstices, and the eclipses of the sun and moon.

he science was farther cultivated and ex- y his successors Anaximander, Anaxi- nd Anaxagoras; but especially by Pytha- ho, about A. A. C. 577, brought from he learning of these people, taught it in nd Italy, and founded the sect of the eans. He taught that the sun was in the the universe; that the earth was round; e were antipodes; that the moon reflect- ays of the sun, and was inhabited like the at comets were a kind of wandering appearing in the further parts of their that the white color of the milky way ng to the united brightness of a great e of small stars; and he supposed that nces of the moon and planets from the ere in certain harmonic proportions to ther.

hilolaus, a Pythagorean, who flourished . A. C. 450, and asserted the diurnal of the earth on its own axis, was taught tas, a Syracusan. About the same time nd Euctemon flourished at Athens, where erved the summer solstice, A. A. C. 432, rising and settings of the stars, and asons they answered to. Meton also in- he cycle of nineteen years, which still name.

udoxus, of Cnidos, lived about A. A. C. was one of the most skilful astronomers metricians of antiquity, and the supposed of many of the propositions in Euclid's Elements. He introduced geometry into the science of astronomy, and travelled into Asia, Africa, Sicily, and Italy, to improve it: and we are informed by Pliny, that he determined the annual year to contain 365 days 6 hours, and also the periodical time of the planets, and made other important discoveries and observations. Calippus flourished soon after Eudoxus, and his celestial sphere is mentioned by Aristotle; but he is better known by a period of seventy-six years which he invented, containing four corrected Metonic periods, and which commenced at the summer solstice, A. A. C. 330. About this time the knowledge of the Pythagorean system was carried into Italy, Gaul, and Egypt, by certain colonies of Greeks.

27. Vitruvius, however, represents the introduction of astronomy into Greece, in a manner somewhat different. He maintains that Berosus, a Babylonian, brought it immediately from Babylon itself, and opened an astronomical school in the isle of Cos. And Pliny says, that, in consideration of his wonderful predictions, the Athenians erected a statue to him in the gymnasium, with a gilded tongue. But if this Berosus be the same with the author of the Chaldaic histories, he must have lived before Alexander. About this time, or rather earlier, the Greeks having begun to plant colonies in Italy, Gaul, and Egypt, became acquainted with the Pythagorean system, and the notions of the ancient druids concerning astronomy. Julius Cæsar informs us that the latter were skilled in this science; and that the Gauls in general were able sailors, which they could not be without a competent knowledge of astronomy; and it is related of Pytheas, who lived at Marseilles in the time of Alexander the Great, that he observed the altitude of the sun at the summer solstices by means of a gnomon. He is also said to have travelled as far as Thule to settle the climates.

28. After Alexander's death the sciences flourished chiefly in Egypt, under the auspices of Ptolemy Philadelphus, and his successors. He founded a school there, which continued till the invasion of the Saracens, A. A. C. 650. From the founding of that school, the science of astronomy advanced considerably. Aristarchus, about A. A. C. 270, strenuously asserted the Pythagorean system, and gave a method of determining the sun's distance by the dichotomy of the moon.—Eratosthenes, who was born at Cyrene A. A. C. 271, measured the circumference of the earth by a gnomon; and being invited to Alexandria, from Athens, by Ptolemy Euergetes, and made keeper of the royal library there, he set up for that prince those armillary spheres, which Hipparchus and Ptolemy the astronomer afterwards employed so successfully in observing the heavens. He also determined the distance between the tropics to be $\frac{11}{83}$ of the whole meridian circle, which makes the obliquity of the ecliptic in his time to be 23° 51′ ⅓.

29. The celebrated Archimedes, too, cultivated astronomy, as well as geometry and mechanics, determined the distances of the planets from one another; and constructed a kind of planetarium or orrery, to represent the phenomena and motions of the heavenly bodies.

30. Not to mention many others of the ancients who cultivated astronomy, Hipparchus, who flourished about A. A. C. 140, was the first who applied himself to the study of every branch of that science. Ptolemy says he made great improvements in it; he discovered that the orbits of the planets are eccentric, that the moon moved slower in her apogee than in her perigee, and that there was a motion of anticipation of the moon's nodes: he constructed tables of the motions of the sun and moon, collected accounts of such eclipses, &c. as had been made by the Egyptians and Chaldeans, and calculated all that were to happen for 600 years: he discovered that the fixed stars changed their places, having a slow motion of their own from west to east; he corrected the Calippic period, and pointed out some errors in Eratosthenes's method for measuring the circumference of the earth; he computed the sun's distance more accurately than his predecessors: but his best work is a catalogue of the fixed stars, to the number of 1022, with their longitudes, latitudes, and apparent magnitudes; which, with most of his other observations, are preserved by Ptolemy in his Almagest.

31. From the time of Hipparchus, till that of Ptolemy, little progress was made in astronomy. He was born at Pelusium, in Egypt, in the first century, and made the greatest part of his observations at the celebrated school of Alexandria in that country. Profiting by those of Hipparchus, and other ancient astronomers, he formed a system of his own, which, though erroneous, was implicitly followed for many ages by all nations. He compiled a great work, called the Almagest, which contained the observations and collections of his predecessors in astronomy. This work was preserved from the conflagration of the Alexandrian library by the Saracens, and translated into Arabic, A. D. 827, and into Latin in 1230. The Greek original was not known in Europe till the beginning of the fifteenth century, when it was brought from Constantinople, then taken by the Turks, by a monk of Trapezond, named George, who translated it into Latin; and various other editions have been since made.

32. From A. D. 800, till the beginning of the fourteenth century, the western parts of Europe were immersed in gross ignorance, while the Arabians, profiting by the books they had preserved from the wreck of the Alexandrian library, cultivated and improved all the sciences, and particularly that of astronomy, in which they had many able professors and authors. The caliph Al Mansur first introduced a taste for the sciences into his empire. His grandson, Al Mamun, who ascended the throne in 814, was a great encourager and improver of the sciences, especially of astronomy. Having constructed proper instruments, he made many observations; determined the obliquity of the ecliptic to be 23° 35; and under his auspices a degree of the circle of the earth was measured a second time in the plain of Singar, on the border of the Red Sea.

33. About this time Alferganus wrote elements of astronomy; and Albategnius, who flourished about the year 880, greatly reformed it, by comparing his own observations with those of Ptolemy. Hence he computed the motion of the sun's apogee from Ptolemy's time to his own settled the precession of the equinoxes at one d gree in seventy years; and fixed the obliquity the ecliptic at 23° 35′. The tables which h composed for the meridian of Aracta, were lon esteemed by the Arabians.

34. After this, though the Saracens had man eminent astronomers, several centuries elapsed without producing any very valuable observations, excepting those of some eclipses observed by Eb Younis, astronomer to the caliph of Egypt, by means of which the quantity of the moon's acceleration since that time may be determined. Other eminent Arabic astronomers were Arzachel, Moor of Spain, who observed the obliquity of the ecliptic, and improved trigonometry by constructing tables of sines, instead of chords of arches, dividing the diameter into 300 equal parts. Alhazen his contemporary, wrote upon the twilight, the height of the clouds, the phænomenon of the horizontal moon, and first showed the importance of the theory of refractions in astronomy.

35. Ulug Beg, grandson of the celebrated Tamerlane, the Tartarian prince, a great proficient in practical astronomy, had very large instruments, particularly a quadrant of about 180 feet high, with which he made good observations. From these he determined the latitude of Samarcand, his capital, to be 39° 27′ 23″; and composed astronomical tables for the meridian of the same so exact, that they differ very little from those constructed afterwards by Tycho Brahe.—His principal work was his catalogue of the fixed stars, made from his own observations in the year 1437.

36. At this period, almost all Europe was immersed in ignorance; which began to be dispelled by the settlement of the Moors in Spain. The emperor Frederic II. about 1230, also began to encourage learning; restoring some decayed universities, founding a new one in Vienna; and causing the works of Aristotle and Ptolemy's Almagest, to be translated into Latin. Two years after this, John de Sacro Bosco, that is of Halifax, compiled from Ptolemy, Albategnius, Alferganus, and other Arabic astronomers, his work, De Sphæra, which was held in the greatest estimation for 300 years after, and was honored with commentaries by Clavius and other learned men.

37. In 1240 Alphonso, king of Castile, not only cultivated astronomy himself but greatly encouraged others; and by the assistance of several learned men corrected the tables of Ptolemy and composed those which were denominated from him the Alphonsine tables. About the same time Roger Bacon, an English monk wrote several tracts relative to astronomy, particularly of the lunar aspects, the solar rays, and the places of the fixed stars; and about 127 Vitello, a Polander, composed a treatise on optics, in which he showed the use of refractions i astronomy.

38. Till the time of Purbach, who was bor in 1423, little farther improvement was made i this science. He composed new tables of sine for every ten minutes, making the radius sixty with four cyphers annexed. He constructe spheres and globes, and wrote several astronom cal tracts, as a commentary on Ptolemy's Alma

ne treatises on arithmetic and dialling,
les for various climates; new tables of
l stars reduced to the middle of that
and he corrected the tables of the
making new equations to them where
onsine tables were erroneous. In his
bles, he placed the sun's apogee in the
nning of Cancer; but retained the ob-
f the ecliptic 23° 33½′, as determined by
t observations. He also observed some
made new tables for computing them,
l just finished a theory of the planets,
e died in 1462, being only thirty-nine
age.

urbach was succeeded in these labors
upil and friend, John Muller, commonly
egiomontanus, who completed the epi-
Ptolemy's Almagest, which Purbach had
and after the death of his friend was in-
Rome, where he made many astronomi-
rvations. Being returned to Nuremberg
, by the encouragement of Bernard Wal-
wealthy citizen, he made several instru-
r astronomical observations, among which
armillary astrolabe, like that used at
ria by Hipparchus and Ptolemy, with
nd a good clock, then but a late inven-
made many observations. He made
ides for thirty years to come, showing
tions, eclipses, &c.; printed the works
of the most celebrated ancient astrono-
d wrote the theory of the planets and
and a treatise on triangles, which con-
eral good theorems; computed a table
for every single minute, to the radius
0, and introduced the use of tangents
nometry.

After Muller's death, which happened at
n 1476, in his fortieth year, Bernard
collected his papers, and continued the
ical observations till his own death.
rvations of both were collected by order
nate of Nuremberg, and published there
by John Schoner; they were also after-
blished in 1618 by Snellius, at the end of
vations made by the landgrave of Hesse;
y with those of Tycho Brahe in 1666.

alther was succeeded, as astronomer at
rg, by John Werner, a clergyman, who
the motion of the comet in 1500; and
veral tracts on geometry, astronomy,
raphy, in a masterly manner; the most
ble of which are those concerning the
f the eighth sphere, or the fixed stars:
act, by comparing his own observations,
1514, with those of Ptolemy, Alphonsus,
ers, he showed that the motion of the
rs, since called the precession of the
s, is 1° 10′ in 100 years. He made also
tar of Aries 26° distant from the equi-
oint, and the obliquity of the ecliptic
28′; constructed a planetarium, repre-
the celestial motions according to the
c hypothesis; and published a transla-
tolemy's geography, with a commentary,
be first proposed the method of finding
tude at sea by observing the moon's dis-
m the fixed stars. Werner died in 1528,
y

42. Nicolaus Copernicus rose next, and made so great a figure in astronomy, that the true system discovered, or rather renewed by him, has been ever since styled the Copernican. He restored the old Pythagorean system of the world, which had been set aside from the time of Ptolemy. About A. D. 1507 he conceived doubts of the Ptolemaic system, and entertained notions about the true one, which he gradually improved by a series of astronomical observations, and the study of former authors. By these he formed new tables, and completed his work in 1530, containing a renovation of the new system of the universe, in which all the planets are considered as revolving about the sun. This work was printed in 1543, under the care of Schoner and Osiander, by the title of Revolutiones Orbium Cælestium; and the author received a copy of it a few hours before his death, on the 23d of May 1543, he being then seventy years of age.

43. After the death of this great luminary of Astronomy, the science and practice of it were greatly improved by Schoner, Nonius, Gemma, Frisius, Rothman, Byrgius, the landgrave of Hesse, &c. Schoner reformed and explained the calendar; improved the methods of making celestial observations; and published a treatise on cosmography. He died four years after Copernicus. Nonius wrote several works on mathematics, astronomy, and navigation, and invented some useful and more accurate instruments than formerly, one of these was the astronomical quadrant, on which he divided the degrees into minutes, by a number of concentric circles; the first was divided into ninety equal parts or degrees, the second into eighty-nine, the third into eighty-eight, and so on to forty-six; so that the index of the quadrant always falling upon or near one of the divisions, the minutes are known by an easy computation.

44. Appian's chief work, the Cæsarean Astronomy, was published at Ingolstadt in 1540; in which he shows how to observe the places of the stars and planets by the astrolabe; to resolve astronomical problems by certain instruments; to predict eclipses, and to describe the figures of them; and the method of dividing and using an astronomical quadrant. To these are added observations of five comets, one of which has been supposed the same with that observed by Hevelius, and if so, it ought to have returned again in the year 1789; but astronomers were disappointed in their expectations.

45. Gemma Frisius wrote a commentary on Appian's cosmography, accompanied with many observations of eclipses: he also invented the astronomical ring, and several other instruments useful in taking observations at sea; and was the first who recommended a time-keeper for determining the longitude. Rheticus began a very extensive work, being a table of sines, tangents, and secants, to a very large radius, and to every ten seconds, or one-sixth of a minute; which was completed by his pupil Valentine Otho, and printed in 1594.

46. William IV., landgrave of Hesse Cassel, applied himself to the study of astronomy about A. D. 1561; and, with the best instruments which could then be procured, made a great

number of observations, published by Snellius in 1618, and preferred by Hevelius to those of Tycho Brahe. From these observations he formed a catalogue of 400 stars, with their latitudes and longitudes, adapted to the beginning of the year 1593.

47. Tycho Brahe, a Danish nobleman, began his studies about the same time with the Landgrave of Hesse, and observed the great conjunction of Jupiter and Saturn; but, finding the usual instruments very inaccurate, he constructed many others much larger and more exact. In 1571 he discovered a new star in the chair of Cassiopeia; which induced him, like Hipparchus on a similar occasion, to make a new catalogue of the stars; which he composed to the number of 777, and adapted their places to the year 1600. In 1576, by the favor of the king of Denmark, he built his new observatory, called Uraniburg, on the small island Huenna, opposite to Copenhagen, which he very amply furnished with many large instruments, some of them so divided as to show single minutes, and in others the arch might be read off to ten seconds. One quadrant was divided according to the method invented by Nonius, that is by forty-seven concentric circles; but most of them were divided by diagonals; a method of division invented by Richard Chanceler, an Englishman. Tycho employed his time at Uraniburg to the best advantage, till the death of the king, when, falling into discredit, he was obliged to remove to Holstein: he afterwards introduced himself to the emperor Rodolph, with whom he continued at Prague till his death in 1601. Tycho was the inventor of a system of astronomy, a kind of semi-Ptolemaic, which he vainly endeavored to establish instead of the Copernican. His numerous works, however, show that he was a man of great abilities; and his discoveries, together with those of Purbach and Regiomontanus, were collected and published together in 1621, by Longomontanus, the favorite disciple of Tycho.

48. Tycho, while residing at Prague with the emperor, prevailed on Kepler to leave the university of Glatz, and to come to him; and Tycho dying in 1601, Kepler enjoyed all his life the title of mathematician to the emperor, who ordered him to finish the tables of Tycho Brahe, which he published in 1627, under the title of Rodolphine. He died about A. D. 1630, at Ratisbon, where he was soliciting the arrears of his pension. From his own observations and those of Tycho, Kepler discovered several of the true laws of nature, by which the motions of the celestial bodies are regulated. He discovered that all the planets revolve about the sun, not in circular, but in elliptical orbits, having the sun in one of the foci of the ellipse; that their motions are not equable, but varying, quicker or slower as they are near to the sun, or farther from him; that the areas described by the variable line drawn from the planet to the sun, are equal in equal times, and always proportional to the times of describing them; and that the cubes of the distances of the planets from the sun, were in the same proportion as the squares of their periodical times of revolution. By observations also on comets, he concluded that they are freely carried about among the orbits of the pl paths that are nearly rectilinear, but w could not then determine.

49. At this time there were many oth proficients in astronomy; as Wright, Bayer, &c. Wright made several good nal observations of the sun, with a qua six feet radius, in the years 1594, 15 1596; from which he greatly improved th of the sun's motion, and computed mor rately his declination, than any person h before. In 1599 he published also, an e work, entitled, 'Certain Errors in Na discovered and detected,' containing a which has commonly, though erroneousl ascribed to Mercator. To Napier we ov excellent theorems and improvements in s besides the ever-memorable invention rithms. Bayer, a German, published nometria, or the figures of all the conste visible in Europe, with the stars marked o and accompanied by names, or the letter Greek alphabet; a contrivance by whi may easily be referred to with distinctn precision.

50. About the same time, astronomy w tivated abroad by Mercator, Maurolycus nus, Homelius, Schultet, Stevin, Galil and in England by Thomas and Leonard John Dee, Robert Flood, Harriot, & beginning of the seventeenth century wa cularly distinguished by the invention copes, and the application of them to mical observations. The more distin early observations with the telescope, we by Galileo, Harriot, Huygens, Hook, &c. It is said that, from report only, made for himself telescopes, by which covered inequalities in the moon's surfac ter's satellites, and the ring of Saturn; al on the sun, by which he found out the tion of that luminary on its axis; and covered that the nebulæ and milky way of small stars.

51. Mr. Harriot, who had previous known only as an algebraist, made much discoveries as Galileo, and as early, if so, as appears by his papers in the poss the earl of Egremont. And Mr. Horrox, astronomer of great talents, found out that the planet Venus would pass over disc on the twenty-fourth of Novemb an event which he announced only to h Crabtree; and these two were the only in the world that observed this transit. made also many other useful observati had even formed a new theory of th taken notice of by Newton; but his earl in the beginning of 1640, put a sto valuable labors.

52. Hevelius, Burgomaster of Dantzi rished about the same time, and observed and phases of the moon; from which obs he compiled his Selenographia. An ac his apparatus is contained in his work Machina Cælestis, a book now very sc most of the copies were accidentally bu the whole house and apparatus, in 1679. lius died in 1688, aged 76.

. Doctor Hook, a contemporary of Hevelius ted instruments with telescopic sights, and ured the others. This occasioned a sharp ute between them; to settle which, Halley went over to Hevelius to examine his instru- ts. The two astronomers made several ob- ations together, very much to their satisfac- ; and amongst them was one of an occulta- of Jupiter by the moon, when they deter- ed the diameter of the latter to be 30′ 33″.

4. Huygens and Fontana, before the middle he seventeenth century, greatly improved the struction of telescopes. The former con- cted one of 123 feet, with which he observed moon and planets, and discovered that urn was encompassed with a ring. With scopes too, of 200 and 300 feet focus, Cas- saw five satellites of Saturn, with his zones belts, and the shadows of Jupiter's satellites ing over his body. In 1666 Azout applied icrometer to telescopes, to measure the dia- ters of the planets, and other small distances the heavens: but an instrument of this kind been invented before, by Gascoigne, though was but little known abroad. To obviate the ficulties arising from the great lengths of re- cting telescopes, and the aberration of the rays, ersennus, in a letter to Descartes, first started idea of making telescopes of reflectors, instead lenses; and in 1663 James Gregory of Aber- en showed how such a telescope might be nstructed.

55. Sir Isaac Newton, after spending some time the construction of both sorts of telescopes, nd out the great inconvenience which arises fractors from the different refrangibility of e rays of light; for which not finding a remedy, d pursuing the other kind, in 1672, he pre- nted to the Royal Society two reflectors, con- ructed with spherical speculums. The incon- nience, however, arising from the different frangibility of the rays of light, has since been ly obviated by Dollond.

56. Towards the end of the seventeenth, and ginning of the eighteenth century, practical tronomy rather languished; but the speculative rt was carried to the highest perfection by New- n in his Principia, by David Gregory, Keil, and ers. Soon after this, great improvements in ronomical instruments began to take place, rticularly in Britain. Graham not only proved clocks and watch work, but also car- d the accuracy of astronomical instruments to surprising degree. He constructed the old ht feet mural arch at the Royal Observatory, eenwich, and a small equatorial sector for king observations out of the meridian; but he chiefly remarkable for contriving the zenith tor of twenty-four feet radius, and afterwards of twelve feet and a half, with which Brad- discovered the aberration of the fixed stars. e reflecting telescope of Gregory and Newton greatly improved by Hadley, who presented ery powerful instrument of that kind to the al Society in 1719. He invented also the cting quadrant or sector, now called by his e, presented to the society in 1731, and now ersally used at sea. It appears, however, an instrument similar to this in its principles, had been invented by Newton; and a description, with a drawing of it, was given by him to Halley, when he was preparing for his voyage in 1701, to discover the variation of the needle: it has also been asserted, that Godfrey of Philadelphia, in America, made the same discovery, and the first instrument of this kind.

57. About the middle of this century, the constructing and dividing of large astronomical instruments were carried to great perfection by Bird; and reflecting telescopes were not less improved by Short, who first executed the divided object glass micrometer, which had been proposed and described by Louville and others. Dollond also improved refracting telescopes, by means of his achromatic glasses: and the discoveries of Herschel are owing to the amazing powers of reflectors of his own construction. Thus, the astronomical improvements in the present century have been chiefly owing to the inventions of, and improvements in, the instruments, and to the establishment of regular observatories in England, France, and other parts of Europe.

58. Roemer, a celebrated Danish astronomer, first made use of a meridional telescope; and, by observing the eclipses of Jupiter's satellites, first discovered the progressive motion of light, concerning which he read a dissertation before the Academy of Sciences at Paris, in 1675. Flamsteed, appointed the first astronomer royal at Greenwich, in 1675, observed for forty-four years, and gave a catalogue of 3000 stars with their places, to the year 1689; also new solar tables, and a theory of the moon according to Horrox; likewise, in Sir Jonas Moore's System of Mathematics, he gave a curious tract on the sphere, showing how to construct, geometrically, eclipses both of the sun and moon, as well as occultations of the fixed stars by the moon. On his observations were founded both Hailey's tables, and Newton's theory of the moon. Cassini, the first French astronomer royal, made many observations on the sun, moon, planets, and comets, greatly improved the elements of their motions, erected the gnomon, and drew the celebrated meridian line in the church of Petronia at Bologna.

59. Flamsteed was succeeded, in 1719, as astronomer royal at Greenwich, by Dr. Halley, who had been sent at the early age of twenty-one, to the island of St. Helena, to observe the southern stars and make a catalogue of them, which was published in 1679. In 1705 he published his Synopsis Astronomiæ Cometicæ, in which he ventured to predict the return of a comet in 1758 or 1759. He first discovered the acceleration of the moon, and gave a very ingenious method for finding her parallax, by three observed phases of a solar eclipse; published in the Philosophical Transactions many learned papers, and amongst them, some concerning the use that might be made of the next transit of Venus, in determining the distance of the sun from the earth; composed tables of the sun, moon, and all the planets, which are still in great repute; and recommended the method of determining the longitude, by the moon's distances from the sun, and certain fixed stars; a method which was first proposed by Warner,

and which has since been carried into execution.

60. A dispute concerning the figure of the earth took place about this time. Newton had determined, from a consideration of the laws of gravity, and the diurnal motion of the earth, that the figure of it was an oblate spheroid; but Cassini, from the measures of Picart, supposed it to be an oblong spheroid. To settle this dispute it was resolved, under Louis XV. to measure two degrees of the meridian; one near the equator, and the other as near the pole as possible. For this purpose, the Royal Academy of Sciences sent to Lapland, Maupertuis, Clairault, Camus, and Lemonnier: who were accompanied by Outhier, and Celsus, professor of anatomy at Upsal. On the southern expedition were sent Godin, Condamine, and Bouguer, to whom the king of Spain joined George Juan and Antonio de Ulloa. These set out in 1735, and returned at different times 1744, 1745, and 1746; but the former party who set out only in 1736, returned the year following; having both fulfilled their commissions. Picart's measure was revised by Cassini and De la Caille, which, after his errors were corrected, was found to agree very well with the other two; and the result of the whole served to confirm the determination of the figure before laid down by Newton. On the southern expedition, the attraction of the great mountains of Peru was found to have a sensible effect on the plumb-line of one of their largest instruments, deflecting it seven or eight seconds from the true perpendicular.

61. In 1742 Dr. Bradley succeeded, on the death of Dr. Halley, as astronomer royal at Greenwich. The accuracy of his observations enabled him to detect the smaller inequalities in the motions of the planets and fixed stars. The consequence of his accuracy was, the discovery of the aberration of light, the nutation of the earth's axis, and a much greater degree of perfection in lunar tables. He observed the places, and computed the elements of the comets which appeared in the years 1723, 1736, 1743, and 1757; made new and more accurate tables of the motions of Jupiter's satellites, and, from a multitude of observations of the luminaries, constructed a table of refractions; which has ever since been in very general estimation for its accuracy, though it is now generally admitted that it gives the refractions too small. He also, with a very large transit instrument, and a new mural quadrant of eight feet radius, constructed by Bird in 1750, made an immense number of observations for settling the places of all the stars in the British catalogue, together with nearly 1500 places of the moon, the greater part of which he compared with Mayer's tables. Bradley died in 1762.

62. Astronomers elsewhere were equally assiduous in their endeavours to promote this science. The theory of the moon was particularly considered by Clairault, D'Alembert, Euler, Mayer, Simpson, and Walmsley, and especially Clairault, Euler, and Mayer, who computed complete sets of lunar tables: those of the last of these authors, for their superior accuracy, were rewarded with a premium of £3000, and brought into use in the computation of the Nautical Ephemeris, published by th
Board of Longitude. The most accurate tabl
of the satellites of Jupiter were composed fro
observations by Wargentin, an excellent Swedis
astronomer. But these have again been supe
seded by the more recent ones of Delambr
There is much room for improvement, howeve
in our knowledge of the elements of Jupiter'
satellites, even with respect to the first satellites
the predicted and actual times of immersion a
emersion sometimes differ to the extent of tw
minutes.

63. Among the many French astronomers who contributed to the advancement of the science, it was particularly indebted to De la Caille for an excellent set of solar tables. He, in 1750, went to the Cape of Good Hope to make observations in concert with the most celebrated astronomers in Europe, for determining the parallax of Mars and the moon, and thence that of the sun, which it was concluded did not much exceed ten seconds. Here he re-examined and adjusted, with great accuracy, the places of stars about the southern pole; and also measured a degree of the meridian. In Italy the science was assiduously cultivated by Bianchini, Boscovich, Fris, Manfredi, Zanotti, and many others; in Sweden, by Wargentin, already mentioned, Blingenstern, Mallet, and Planman; and in Germany by Euler, Mayer, Lambert, Grischow, and others.

64. In 1760 all the learned societies in Europe made preparations for observing the transit of Venus over the sun, which had been predicted by Halley more than eighty years before, with
the use that might be made of it in determinin
the sun's parallax, and the distances of the pl
nets from the sun. The same exertions were r
peated, to observe the transit in 1769, by sendin
observers to different parts of the world; an
from the whole, Short computed that the sun
parallax was nearly 8¾ seconds, and consequentl
the distance of the sun from the earth abo
24,114 of the earth's diameters, or ninety-s
millions of miles. Bradley was succeeded, i
1762, in his office of astronomer royal, by Bliss
Savilian professor of astronomy; who, being i
a declining state of health, did not long enjoy i

65. In 1765 Bliss was succeeded by Nev
Maskelyne, who, in January 1761, was sent b
the Royal Society, at a very early age, to th
island of St. Helena, to observe the transit
Venus over the sun, and the parallax of th
star Sirius. The first of these objects partl
failed, by clouds preventing the sight of the se
cond internal contact; and the second also, owin
to Short having suspended the plumb-line by
loop from the neck of the central pin. Howeve
he indemnified himself by many other valuabl
observations: thus, he observed at St. Helena
the tides; the horary parallaxes of the moon
and the going of a clock, to find by compariso
with its previous going, which had been observe
in England, the difference of gravity at the tw
places; also in going out and returning, he prac
tised the method of finding the longitude by th
lunar distances taken by Hadley's quadrant
making out rules for the use of seamen, and
teaching the method to the officers on board th
ship. This method was explained in the Philo

sophical Transaetions, for 1762, and more fully afterwards in the British Mariner's Guide, published in 1763. In September 1763, he sailed for the island of Barbadoes, to settle the longitude of the place, to examine Harrison's watch, and to try Irwin's marine chair. While at Barbadoes, he made many other observations, and amongst them, many relating to the moon's horary parallaxes, not yet published.

66. Maskelyne returning to England in the end of 1764, recommended to the board of Longitude the lunar method of finding the longitude; and proposed to it the project of a nautical almanack, to be calculated and published to facilitate that method. This the board agreed to, and the first volume was published for 1767, and has continued ever since to the great benefit of navigation.

67. In consequence of a proposal, made by this astronomer to the Royal Society, the project was formed of measuring accurately the effect of some mountain on the plumb-line, in deflecting it from the perpendicular; and Schehallien, in Scotland, having been found the most convenient in this island for the purpose, he went into Scotland to conduct the business; by this experiment he showed that the sum of the deflections on the two opposite sides was about 11⅗° of a degree; and proved to the satisfaction of the whole world, the universal attraction of matter. From the data resulting from these measures, Dr. Hutton computed the mean density of the whole matter in the earth, to be about 4½ times that of common water.

68. The discoveries of Dr. Herschel form a new era in astronomy. In 1781, he began with observations on the periodical star in Coilo Ceti, and a new method of measuring the lunar mountains, none of which he made more than half a mile in height; and having constructed telescopes far more powerful than any former ones, proceeded to other observations; such as, on the rotation of the planets round their axes; on the parallax of the fixed stars; catalogues of double, triple, &c. stars; on the proper motion of the sun and solar system; on the remarkable appearances of the polar regions of the planet Mars; &c. Above all his discoveries of a new primary planet, on the 13th of March, 1781, called by him the Georgian Planet, but named the Herschel, and sometimes Uranus, by foreign astronomers, and of its six satellites, discovered since that time, has greatly enlarged the bounds of the solar system, this new planet being more than twice as far from the sun as the planet Saturn.

69. M. Piazzi, astronomer royal at Palermo, discovered on January 1st, 1801, another planet moving in an orbit between Mars and Jupiter. This planet has been named Ceres. Another was discovered on March 28th, 1802, by Dr. Olbers of Bremen, and named Pallas; a third was discovered and named Juno by Mr. Harding of Lilienthal; and a fourth by Dr. Oliers, and named Vesta, on March 29th, 1807. These planets are all very small, and all so nearly at the same distance from the sun, and moving in orbits differing so little either in eccentricity or declination, that they have by some been conjectured to be fragments of a larger planet, which from some explosion had been burst, and its parts scattered abroad in space.

It is probable that as astronomical instruments become more improved, further discoveries of the same kind will be made, and that the boundaries of the solar system may be enlarged by the discerning of planets which circulate round the sun even beyond the orbit of the Georgian planet.

71. Dr. Maskelyne was succeeded at the Greenwich observatory in 1811, by J. Pond, esq. the present astronomer royal, under whose managment the business of this important institution has been kept in full activity. The number of instruments has been greatly increased. The use of the mural quadrant has been abandoned for that of the circle, two of which, one by Troughton, and one by T. Jones, are in constant use, and give results which accord with each other in a manner altogether surprising. The most important discoveries may be hoped for from the skill and activity with which the splendid instruments at Greenwich are managed. All indeed that appears wanting in that institution, is a telescope of the first class to follow up the discoveries in siderial astronomy, which conferred such splendor on the name of Herschel. But we are glad to perceive that this department of the science is likely to be carried to a degree of perfection which few would have hoped for, by Mr. Herschel, junior, the worthy and able son of the great astronomer, and his friend Mr. South, whose recent publication on the motion of double stars does them the highest credit.

72. On the continent of Europe, the greatest ardor is at present evinced in the cultivation of this science. The labors of Schumercher at Altona, are unintermitted and most valuable. He may be considered at present as a common bond among astronomical men. Greass at Gottingen, Littrow, at Venice; Bressel, at Konigsberg; Struve, at Dorpat; Zach, at Genoa; and a host of other individuals distinguished for their labors and their zeal, have devoted themselves to astronomy.

73. In our own country, it would be injustice to pass over the names of Woodhouse and Brinkley, whose eminence in this science is of the most distinguished kind.

74. Another striking feature of the present day is the formation of 'The Astronomical Society of London,' an institution whose only object is the cultivation of astronomical science. This society includes among its members almost every individual known to the world as distinguished for astronomical knowledge. The memoirs of the society, of which the third part is just ready for publication, are very valuable and interesting.

75. The university of Cambridge has recently evinced its sense of the importance of a practical knowledge of this science, by the erection of an observatory on the most splendid scale; and the English government has also shown by the recent order for the establishment of an observatory at the Cape of Good Hope, that the importance which it has always attached to the cultivation of this science, has suffered no abatement.

76. Historical accounts and lists of the principal authors and writings on this science, are contained in Weidler's and Bailly's History of Astronomy. Adam, Vossius, Bayle, Chauffepie, Niceron, Perraut, the chronological table of Riccioli, and that of Sherburn, at the end of his edition of Manilius; and the first volume of De la Lande's astronomy, may also be consulted. The more modern and popular books on astronomy are very numerous and well known; as those of Ferguson, Long, Emerson, Vince, De la Lande, Leadbetter, Brent, Keil, Whiston, Wing, Street, Bonnycastle, Gregory, Brinkley, &c. but the recent treatise on astronomy by Woodhouse, is by far the most complete that has appeared in the English language.

PART I.

OF THE APPEARANCES OF THE CELESTIAL BODIES.

SECT. I.—OF THE CELESTIAL BODIES, AS SEEN BY THE NAKED EYE.

77. The most obvious celestial phenomenon is the daily rising of the sun in the east, and his setting in the west; next to which is that of the moon and stars appearing, and keeping the same westerly course. These cannot be long taken notice of before we must perceive that neither the sun nor moon always rise exactly in the same point of the heavens. If we observe the sun, from the beginning of March, we find that he seems to rise almost every day sensibly more to the northward, than he did the day before, to continue longer above the horizon, and to be more elevated at mid-day, till towards the end of June, when he is observed to move backward in the same manner: this retrograde motion continues beyond the middle of December, when he begins again to move forwards, and so on.

78. When the new moon (as she is called, at her early period,) first becomes visible, she appears in the western part of the heavens, at no great distance from the sun. Every night she increases in size, and removes to a greater distance from the sun; till at last she appears in the eastern part of the horizon, just at the time the sun disappears in the western. After this she gradually moves farther and farther eastward, rising every night later and later, till at last she seems to approach the sun as nearly in the east as she did in the west, and rises only a little before him in the morning, as in the first part of her course she set in the west not long after him. All these different appearances are completed in the space of a month; after which they begin in the same order as before.

79. Several of the stars neither rise in the east, nor set in the west, but seem to turn round an immovable point, near which is placed a single star called the pole, or pole star. This point is more or less elevated according to the different parts of the earth from which we take our view. The inhabitants of Lapland, for instance, see it much more elevated above the horizon than we do; we see it more elevated than the inhabitants of France and Spain; and they, again, see it more elevated than the inhabitants of Barbary. By continually travelling south, this star at last seems depressed in the horizon, and another point appears directly opposite to it, round which the stars in the southern part of the horizon seem to turn. In this part of the heavens, however, there is no star so near the pole as there is in the northern part: nor is the number of stars in the southern part of the heavens so great as in the northern part.

80. Supposing us still to travel southward, the north pole entirely disappears, and the whole atmosphere appears to turn round a single point in the south, as the northern hemisphere appears to us to turn round the pole star. The general appearance of the heavens, therefore, is that of a vast concave sphere, turning round two points fixed in the north and south parts of it, once in twenty-four hours.

81. The majority of the stars keep their places with respect to one another; that is, if we observe two stars having a certain apparent distance from each other one night, they seem to have the same every succeeding night. But all the stars in the heavens do not appear to be of this fixed kind: some of them change their places, with regard to the fixed stars, and to one another. Of these ten are at present known. They are distinguished by the appellation of planets, from πλαναω, to wander, and are called by the names of Mercury, Venus, Mars, Ceres, Pallas, Juno, Vesta, Jupiter, Saturn, and Herschel, Uranus, or the Georgium Sidus. The fixed stars are likewise distinguished from the planets by continually exhibiting that appearance which is called the scintillation or twinkling of the stars.

82. Mercury is a small star which emits a very bright white light; but, by always keeping near the sun, he is seldom to be seen; and when he does make his appearance, his motion toward the sun is so swift, that he can only be discerned for a short time, a little after sun-set, and again a little before sun-rise.

83. Venus the most beautiful star in the heavens, known by the names of the morning and evening star, keeps near the sun, though at almost double the distance of Mercury. She is never seen in the eastern quarter of the heavens when the sun is in the western; but seems to attend him in the evening, or to give notice of his approach in the morning.

84. Mars is of a red fiery color, and gives a much duller light than Venus, though sometimes he equals her in size. He is not subject to the same limitation in his motions as Mercury or Venus; but appears sometimes very near the sun, and sometimes at a great distance from him; sometimes rising when the sun sets, or setting when he rises. Of this planet it is remarkable, that when he approaches any of the fixed stars, they change their color, grow dim, and often become totally invisible, though at some little distance from the body of the planet: but Herschel thinks this has been exaggerated by former astronomers.

85. Jupiter and Saturn often appear at great distances from the sun. The former shines with a bright white light, and the latter with a pale faint one; and the motion of Saturn among the

rs is so slow, that, unless carefully ob-
he will not be thought to move at all.
's motion is still slower, and he is sel-
e seen without a telescope.

he apparent magnitudes of these bodies
different at different times. Every per-
have observed that Venus is not always
big; and this apparent difference of
le is so remarkable, that she appears no
thirty-two times larger at some seasons
thers. This increase of magnitude is
very remarkable in Mars and Jupiter,
so in Saturn, Mercury and Herschel.
anets by no means appear to us to move
in the heavens, but, on the contrary,
es go forward, sometimes backward, and
es seem to be stationary.

here are other moving bodies, besides
ets, which appear at uncertain intervals,
a very different aspect. These are very
s, and upwards of 500 are recorded as
visited our system. They are called
from κομητης, hairy, having a long tail,
at resembling the appearance of hair.
wever, is not always the case; for some
have appeared as round as planets: but
al they have a luminous matter diffused
them, or projecting out from them, which
rance very much resembles the Aurora
. They appear to come in a direct line
the sun, as if they were going to fall into
; and after having disappeared for some
consequence of their proximity to that
, fly off again on the other side as fast
ame, projecting a tail much greater and
in their recess; but, getting daily at a
distance from us in the heavens, they
lly lose some of their splendor, and at
ly disappear.

e apparent magnitude of comets is very
; sometimes they appear only of the
of the fixed stars; at other times they
e diameter of Venus, and sometimes
he sun or moon. In 1652 Hevelius ob-
comet which seemed not inferior to the
size, though it was not so bright, but
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With respect to their apparent motions,
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e fixed stars are liable to changes: se-
erved by the ancients are now no more
n; and new ones have appeared which
nown to the ancients. Some of them
disappeared for some time, and again
isible. At times some have been ob-
distinguish themselves by superlative
ut afterwards decreasing, to vanish by
and to be no more seen. One of these
g first seen and observed by Hippar-
him upon composing a catalogue of
stars, that by it posterity might learn
any of the stars perish, and others are
afresh. After several ages Tycho Brahe
another new star, which put him on the
gn. Of these changes accounts have been given by Halley, Montanere, and Pigot, in the Philosophical Transactions. As a specimen of these phenomena we shall here insert an extract from the former.

90. 'The first new star in the chair of Cassiopeia was not seen by Cornelius Gemma on the 8th of November, 1572, who says, he that night considered that part of the heavens in a very serene sky, and saw it not: but that the next night November 9, it appeared with a splendor surpassing all the fixed stars, and scarcely less bright than Venus. This was not seen by Tycho Brahe before the 11th of the same month: but from thence he assures us that it gradually decreased and died away, so that in March 1574, after sixteen months, it was no longer visible; and at this day no signs of it remain. The place, thereof, in the sphere of fixed stars, by the accurate observations of Tycho, was $0^{s}\ 9^\circ\ 17'$ *a* 1^{ma} ∗ ♈^{is}, with 53° 45′ N. lat.

91. 'Such another star was seen and observed by the scholars of Kepler, to begin to appear Sept. 30. O. S. anno 1604, and which was not to be seen the day before. It broke out at once with a lustre surpassing that of Jupiter; and like the former died away gradually, and in much about the same time disappeared totally, there remaining no footsteps thereof in January 160$\frac{4}{5}$. This was near the ecliptic, following the right leg of Serpentarius; and by the observations of Kepler and others, was in $7^{s}\ 20^\circ\ 00'$ *a* 1^{ma} ∗ ♈, with north lat. 1° 56′. These two seem to be of a distinct species from the rest, and nothing like them has appeared since.

92. 'But between them, viz. in 1596, we have the first account of the wonderful star in Collo Ceti, seen by David Fabricius on the 3d of August, as bright as a star of the third magnitude, which has been since found to appear and disappear periodically; its period being precisely seven revolutions in six years, though it returns not always with the same lustre. Nor is it ever totally extinguished, but may at all times be seen with a six feet tube. This was singular in its kind till that in Collo Cygni was discovered. It precedes the first star of Aries 1° 40′, with 15° 57′ south lat.

93. 'Another new star was first discovered by William Jansonius in the year 1600, in pectore, or rather in eductione, Colli Cygni, which exceeded not the third magnitude. This having continued some years became at length so small as to be thought by some to have disappeared entirely; but in the years 1657, 1658, and 1659, it again arose to the third magnitude; though soon after it decayed by degrees to the fifth or sixth magnitude; and at this day is to be seen as such in $9^{s}\ 18^\circ\ 38'$ *a*^{ma} ∗ ♈, with 55° 29′ north lat.

94. 'A fifth new star was first seen by Hevelius in 1600, on July 15, O. S. as a star of the third magnitude, but by the beginning of October was scarce to be perceived by the naked eye. In April following it was again as bright as before, or rather greater than of the third magnitude, yet wholly disappeared about the middle of August. The next year, in March 1672, it was seen again, but not exceeding the sixth magnitude: since when it has been no farther visible, though we have frequently sought for its

return; its place is $9^s\ 3^\circ\ 17'$ *a* 1^{ma} $\ast$ ♈, and has lat. north 47° 28′.

95. 'The sixth and last is that discovered by Mr. G. Kirch in the year 1686, and its period determined to be of 404½ days; and though it rarely exceeds the fifth magnitude, yet it is very regular in its returns, as we found in the year 1714. Since then we have watched, as the absence of the moon and clearness of the weather would permit, to catch the first beginning of its appearance in a six feet tube, that, bearing a very great aperture, discovers most minute stars. And on June 15, last, it was first perceived like one of the very least telescopical stars; but in the rest of that month and July it gradually increased so as to become in August visible to the naked eye, and so continued all the month of September. After that it again died away by degrees, and on the 8th of December, at night, was scarcely discernible by the tube; and, as near as could be guessed, equal to what it was at its first appearance on June 15th; so that this year it has been seen in all nearly six months, which is but little less than half its period; and the middle, and consequently the greatest brightness, falls about the 10th of September.'

96. The galaxy or milky way is a remarkable appearance in the heavens, being a broad ring of a whitish color surrounding the whole celestial concave, whose light is now known to proceed from vast clusters of stars, discoverable only by the telescope. Mr. Brydone, in his journey to the top of Mount Ætna, found this phenomenon to make a glorious appearance, 'like a pure flame (as he expresses it) that shot across the heavens.'

97. The only other appearances which are very observable by the unassisted eye, are those obscurations of the sun and moon commonly called eclipses. These are too well known, and attract the attention too much, to need any particular description. We have, however, accounts very well authenticated, of obscurations of the sun continuing for a much longer time than a common eclipse possibly can do, and likewise of the darkness being much greater than usual on such occasions.

SECT. II. OF THE CELESTIAL BODIES AS SEEN THROUGH TELESCOPES.

98. Although the sun, to the naked eye, is extremely bright and splendid, he is frequently observed, even through a telescope of but very small powers, to have dark spots on his surface, which are said to have been first discovered in 1611; and the honor of the discovery is disputed betwixt Galileo and Scheiner, a German Jesuit at Ingolstadt. But whatever merit Scheiner might have in the priority of the discovery, it is certain that Galileo far exceeded him in accuracy; though Scheiner's work has considerable merit, as containing observations selected from above 3000 made by himself.

99. It appears from the papers of Harriot, the English algebraist, which were found in 1784, at the seat of the earl of Egremont in Sussex, that he made a great number of observations upon the solar spots much about the
same time; and Dr. Zach, astronomer
duke of Saxe Gotha, in an account of H
papers, published in 1788, says that ther
greatest probability of Harriot being the f
coverer of these spots, even before
Galileo or Scheiner. Galileo's first pr
observations are only for June 2, 1612, an
of Scheiner of the month of October in th
year, whereas Harriot's, as appears fr
MSS, are of December 8, 1610.

100. There is great variety in the mag
of the solar spots; the difference is chief
perficial extent of length and breadth
depth or thickness is very small: som
been so large as by computation to be
of covering the whole surface of the e
even five times its surface. The diam
a spot, when near the middle of the
measured by comparing the time it t
passing over a cross hair in a telescope,
time wherein the whole disk of the su
over the same hair. It may also be meas
the micrometer; and thus we may jud
many times the diameter of the spot
tained in the diameter of the sun.

101. Spots are subject to increase an
nution of magnitude, and seldom contin
in the same state. They are of various
most of them having a deep black nucle
rounded by a dusky cloud, whereof th
parts near the black are a little brighter
outskirts. They change their shapes, so
in the manner that our clouds do, tho
often so suddenly; thus what is of a
figure to day, will to-morrow, or perhaps
hours, be of a different one; what is
one spot will in a little time be broken
or three; and sometimes two or three s
coalesce, and be united into one. The
of spots on the sun is very uncertain
times there are a great many, sometin
few, and sometimes none at all.

102. Scheiner made observations on
from 1611 to 1629; and says he nev
his disk quite free from spots, exceptin
days in December, 1624. At other time
quently saw twenty, thirty, and in the ye
he was able to count fifty spots on the
time. In an interval afterwards of twen
from 1650 to 1670, scarcely any spots
be seen, and since that time some ye
furnished a great number of spots, an
none at all; but since the beginning of
century, not a year has passed where
were not seen.

103. It is evident from these variou
ances that the spots are not endowed
permanency, nor at all regular in the
magnitude, number, or time of appea
continuance. Hevelius observed one t
and vanished in sixteen or seventeen ho
no one has been observed to continu
than seventy days: those spots that ar
gradually are gradually dissolved, wh
that arise suddenly are for the most
denly dissolved. When a spot disapp
part where it was, generally becomes
than the rest of the sun, and continues
veral days; on the other hand, those br

culæ (as the others are called maculæ)
es turn to spots.

The solar spots appear to have a motion
he sun's disk. Every spot, if it conti-
g enough without being dissolved, ap-
enter the sun's disk on the east side, to
thence with the velocity continually in-
till it has gone half way, and then to
ower and slower till it goes off at the
; after which it disappears for about the
ace of time that it spent in crossing the
then enters upon the east side again,
the same place, and crosses it in the
ck, and with the same unequal motion
e. The motion of the spots is in the
the signs (the same way that all mo-
the solar system, those of the comets
cepted, are performed); and therefore,
earth revolves round the sun the same
h the solar spots, one of these will ap-
remain longer on the disk than it would
e do if the earth remained at rest.

The face of the sun, when clear of spots,
the naked eye through a smoked or co-
ass, or through a thin cloud, or the va-
ar the horizon, appears all over equally
s; but when viewed through the teles-
e glasses being smoked or colored, the
of the disk appears brighter than the out-
ecause the light is darted more directly
us from the middle than from any other
d the faculæ appear more distinctly near
, as being on a darker ground than in
dle.

All the phenomena of the solar spots, as
d by Scheiner and Hevelius, may be sum-
in the following particulars: 1. Every
ch has a nucleus, or considerably dark
s also an umbra, or fainter shade, sur-
g it. 2. The boundary betwixt the nu-
d umbra is always distinct and well de-
3. The increase of a spot is gradual, the
of the nucleus and umbra dilating at the
e. 4. In like manner, the decrease of
gradual; the breadth of the nucleus
bra contracting at the same time. 5.
rior boundary of the umbra never con-
harp angles; but is always curvilinear,
gular soever the outline of the nucleus
6. The nucleus of a spot, whilst on
ease, often changes its figure by the
ncroaching irregularly upon it, insomuch
a small space of time new encroach-
re discernible, whereby the boundary
the nucleus and umbra is perpetually
7. It often happens, by these encroach-
at the nucleus of a spot is divided into
ore nuclei. 8. The nuclei of the spots
oner than the umbræ. 9. Small umbræ
seen without nuclei. 10. An umbra of
iderable size is seldom seen without a
in the middle of it. 11. When a spot
nsists of a nucleus and umbra is about
pear, if it is not succeeded by a facula,
brighter than the rest of the disk, the
ere it was is soon after not distinguish-
n the rest.

Dr. Wilson, in the Phil. Trans. vol. lxiv. mentions the following appearances: 1. When the spot is about to disappear on the western edge of the sun's limb, the eastern part of the umbra first contracts, then vanishes, the nucleus and western part of the umbra remaining; then the nucleus gradually contracts and vanishes, while the western part of the umbra remains. At last this disappears also; and if the spot remains long enough to become again visible, the eastern part of the umbra first becomes visible, then the nucleus; and when the spot approaches the middle of the disk, the nucleus appears environed by the umbra on all sides, as already mentioned. 2. When two spots lie very near to one another, the umbra is deficient on that side which lies next the other spot; and this will be the case, though a larger spot should be contiguous to one much smaller; the umbra of the large spot will be totally wanting on that side next the small one. If there are little spots on each side of the large one, the umbra does not totally vanish; but appears flattened or pressed in towards the nucleus on each side. When the little spots disappear, the umbra of the large one extends itself as usual. This circumstance, he observes, may sometimes prevent the disappearance of the umbra in the manner above mentioned; so that the western umbra may disappear before the nucleus, if a small spot happens to break out on that side.

108. Mr. Wollaston observes, in the same volume, p. 337, that the appearances mentioned by Wilson are not constant; and as much depends on the accuracy of observers and the situation of the spots on the sun's orb, it is probable that the observation will continue to differ in minute particulars, till a consistent theory is formed, by which the cause of these phenomena may be explained. The spots are not confined to one part of the sun's disk; though they are generally observed about his polar regions. The paths they describe in their course over the disk are exceedingly different; sometimes being straight lines, sometimes curves, sometimes descending from the northern to the southern parts of the disk, sometimes ascending from the southern to the northern, &c. These appearances are increased by the inclination of the solar axis to the plane of the earth's orbit; from whence it arises, that the part described by a spot which is on a circle parallel to the solar equator sometimes appears oval, and at others a straight line, according to the position of the earth with respect to the sun. Besides these spots, there are others which sometimes appear very round and black, travelling over the disk of the sun in a few hours, totally unlike the others, and proceeding from an interposition of the planets Mercury and Venus between the earth and the sun. Excepting the two kinds of spots above-mentioned, however, no kind of object is discoverable on the surface of the sun, but he appears like an immense ocean of light.

109. The appearance of the Moon is very different. Many darkish spots appear in her to the naked eye; and through a telescope their number is prodigiously increased; she also appears very plainly to be more protuberant in the middle than at the edges, or to have the figure of

a globe, and not a flat circle. When the moon is gibbous or horned, the one side appears very ragged and uneven, but the other pretty well defined and circular. The spots in the moon always keep their places exactly; never vanishing, or going from one side to the other, as those of the sun do. We sometimes see more or less of the northern or southern, the eastern or western part of the disk or face; which is owing to what is called her libration. Plate IV. fig. 1, gives a representation of the full moon in her mean libration, with the principal spots according to Riccioli, Cassini, and Mayer.

110. Mercury, when looked at through telescopes magnifying about 200 or 300 times, appears equally luminous throughout his whole surface, without the least dark spot. He appears to have the same phases with the moon, being sometimes horned, sometimes gibbous, and sometimes shining almost with a round face, though not entirely full, because his enlightened side is never turned directly towards us.

111. Dr. Herschel has frequently examined Mercury with telescopes of highly magnifying powers; but he always appeared equally bright on every part of his disk, without any dark spot or ragged edge. But Schroeter, who has so much distinguished himself in this department of astronomy, affirms that he has not only seen spots, but even mountains in Mercury; and that he has succeeded in measuring the altitude of two of them. He makes the elevation of the higher of these about ten English miles and three-quarters, or about thrice the height of the highest mountain on our earth: but where so small an error in the admeasurement of the angle on which the computation is founded would entail so great a mistake in the result, we can only consider this determination of the height of the mountains of Mercury, as a strong evidence that considerable elevations do exist on that planet. By examining the variation on the appearance of Mercury's horns from day to day, Schroeter found the period of his diurnal rotation to be about twenty-four days, five hours, and twenty-eight minutes. Considerable difference of opinion exists respecting the atmosphere of this planet: if it possesses any, it certainly at the centre subtends a very small angle.

112. Venus, when viewed through a telescope, is rarely seen to shine with a full face, but has phases and changes like those of the moon, increasing, decreasing, being horned, gibbous, &c. Her illuminated part is constantly turned towards the sun; being directed towards the east when she is a morning star, and towards the west when an evening star. Her different phases were first discovered by Galileo. Dr. Herschel has published, in the Phil. Trans. for 1793, a long series of observations on this planet, from which he concludes, 1 that the planet revolves about its axis, but that the period, and the position of the axis, are uncertain; 2. that the planet's atmosphere is very considerable; 3. that there are probably hills and inequalities upon its surface, though he has not been able to see much of them, owing, perhaps, to the density of its atmosphere; and, 4. that this planet is somewhat larger than the earth, instead of being less, as former astronomers have imagined. Schroeter, also, in the Phil. Trans. for 1792, published the result of a series of observations on this planet, which were begun in 1780. He infers from his observations that Venus has an atmosphere of great density and height, and that many of her mountains are five or six times as high as those of the earth.

113. Much larger and more remarkable spots have been perceived on the disk of Mars than on that of any other primary planet. By very accurate observations, Herschel has determined the proportion between the polar and equatorial diameters, and the length of the day in this planet. He has also given some good conjectures on its seasons and its atmosphere: the latter it is now ascertained to have; but though considerable, the atmosphere is not of so great an extent as the conjectures on former observations led astronomers to imagine. By very accurate observations, Dr. Herschel has determined that the proportion of his polar and equinoctial axis is as 1272 to 1355, or nearly as 15 to 16; that its time of rotation on its axis is 24 h. 22 m. and that the inclination of the axis of Mars to the orbit of the earth is 59°42′. From the great obliquity of this planet's axis of rotation, the polar regions of it are alternately presented towards the earth, and a much better opportunity is thereby offered for examining its surface than that of any other planet. This, however, is in some degree counterbalanced by the very dense atmosphere with which this planet is surrounded. It is not a little remarkable, that when either pole emerges into the light of the sun, it exhibits a very striking brilliancy, something like what would arise from its being covered with snow. The analogy between this phenomenon and what annually takes place on our own globe, is too obvious to escape notice.

114. The planet Ceres is of a red color, and appears about the size of a star of the eighth magnitude. It is surrounded by a very dense and extensive atmosphere, in which very great and sudden changes are observed to take place. The estimates that have been made of this planet's diameter are a striking instance of the difficulty of measuring the apparent diameters of such small objects. Herschel makes its diameter about 163 miles; and Schroeter about 1624, or nearly ten times as much. Its periodical revolution round the sun is accomplished in about four years, seven months, and ten days.

115. Pallas is nearly of the same size as Ceres, but not quite of so red an appearance. Its period of revolution has been computed to be about four years, ten months, and eleven days; and its diameter has been estimated at from eighty to upwards of 2000 miles. It has also an atmosphere, but of less extent than that of Ceres; but it differs from that and all other planets in the great inclination of its orbit. The planets generally circulate in planes that do not deviate much from the plane of the ecliptic; but the orbit of Pallas is inclined about thirty-five degrees, nearly five times as much as that of any other planet.

116. Juno is of a reddish color, and is surrounded by an atmosphere of considerable den-

s diameter is allowed by all observers s than that of either Ceres or Pallas. It om all other planets in the eccentricity it ; being, when at its greatest distance sun, at double the least distance. The f its revolution is about four years and .

Vesta appears like a star of the sixth de, and may on a clear night be some- en with the naked eye. Its light is whiter re intense than any of the other three anets. Its apparent diameter has been d at about half that of the fourth satellite n; and yet it is very remarkable that its so intense, that Schroeter saw it several ith his naked eye, while it requires a e of considerable power to see the fourth d any satellite of Saturn. This planet in about three years, sixty-six days, and rs. The orbits of all these four little (which from their smallness have been Asteroids) intersect each other in various ; and the points of intersection are conti- varying from the changes in the places aphelia.

Jupiter has the same general appear- ith Mars, only that the belts on his surface ch larger and more permanent. Their is very variable, as sometimes only one, other times no fewer than eight, may be d. They are generally parallel to one , but not always so; and their breadth is variable, one belt having been observed to row, while another in its neighbourhood sed in breadth, as if the one had flowed ther. The time of their continuance is ertain, sometimes remaining unchanged months; at others, new belts have been in an hour or two. In some of these belts ck spots have appeared, which moved over the disk from east to west, and re- in a short time to the same place; from the rotation of this planet about its axis n determined.

The figure of Jupiter is evidently an ob- eroid, the longest diameter of his disk the shortest as thirteen to twelve. His is from west to east, like that of the sun, plane of his equator is very nearly coin- ith that of his orbit; so that there can be any difference of seasons in that planet. ation has been observed to be somewhat in his aphelion than his perihelion.

The most remarkable circumstance at- this planet, is his having four moons or , which constantly revolve round him nt distances. These are all supposed to ellipses; though the eccentricities of all are too small to be measured, excepting the fourth; and even this amounts to no an 00·07 of its mean distance from the .

The periodic times and distances of these , in semidiameters of Jupiter, as well as sh miles, the angles under which their ppear, as seen from the earth, at its mean from Jupiter, taken from the latest and act observations, are as follow :

No.	Periodic times.	Distances in		Angles of Orb.
		Semi-diam.	Miles.	
1	1*d*. 18*h*. 27′ 34″	$5\frac{2}{3}$	266,000	3 55″
2	3 13 13 42	$9\frac{1}{59}$	423,000	6 14
3	7 3 42 36	$14\frac{5}{13}$	676,000	9 58
4	16 16 32 9	$25\frac{3}{10}$	1,189,000	17 30

122. The nodes of these satellites are not in the same place. All of them, by reason of their immense distance, seem to keep near their primary, and their apparent motion is a kind of oscillation like that of a pendulum, going alternately from their greatest distance on one side to the greatest distance on the other, sometimes in a straight line, and sometimes in an elliptic curve. When a satellite is in its superior semicircle, or that half of its orbit which is more distant from the earth than Jupiter is, its motion appears to us direct, according to the order of the signs; but in its inferior semicircle, when it is nearer to us than Jupiter, its motion appears retrograde; and both these motions seem quicker the nearer the satellites are to the centre of the primary, slower the more distant they are, and, at the greatest distance of all, they appear for a short time to be stationary.

123. It is evident, from this account of the system of Jupiter and his satellites, that occultations of them must frequently happen by their going behind their primary, or by coming in betwixt us and it. The former takes place when they proceed towards the middle of their upper semicircle; the latter when they pass through the same part of their inferior semicircle. Occultations of the former kind happen to the first and second satellite; at every revolution, the third very rarely escapes an occultation, but the fourth more frequently by reason of its greater distance. It is seldom that a satellite can be discovered upon the disk of Jupiter, even by the best telescopes, excepting at its first entrance, when, by reason of its being more directly illuminated by the rays of the sun than the planet itself, it appears like a lucid spot upon it. Sometimes, however, a satellite, in passing over the disk, appears like a dark spot, and is easily to be distinguished. This is supposed to be owing to spots on the body of these secondary planets; and it is remarkable, that the same satellite has been known to pass over the disk at one time as a dark spot, and at another so luminous that it could not be distinguished from Jupiter himself, except at its coming on and going off.

124. To account for this phenomenon, we must say that either the spots are subject to change, or, if they be permanent like those of our moon, that the satellites at different times turn different parts of their globes towards us. Possibly both these causes may contribute to produce the phenomena just mentioned. For these reasons also both the light and apparent magnitude of the satellites are variable; for the fewer spots there are upon that side which is turned towards us, the brighter it will appear; and, as the bright side

only can be seen, a satellite must appear larger the more of its bright side it turns towards the earth, and the less so the more it happens to be covered with spots. The fourth satellite, though generally the smallest, sometimes appears bigger than any of the rest; the third sometimes seems least, though usually the largest; nay, a satellite may be so covered with spots as to appear less than its shadow passing over the disk of the primary, though we are certain that the shadow must be smaller than the body which casts it.—To a spectator placed on the surface of Jupiter, each of these satellites would put on the various appearances of the moon; but they appear to us always round, having constantly their enlightened half turned towards the earth.

125. When these moons pass through their inferior semicircles, they cast a shadow upon Jupiter, and thus cause an eclipse of the sun to his inhabitants; and in some situations this shadow may be observed going before or following the satellite. Herschel says, 'April 6th, 1780, I had a fine view of Jupiter, and saw, as soon as I looked into the telescope, without any previous notice of it, the shadow of the third satellite, and the satellite itself on the lower part of the disk. The shadow was so black and well defined, that I attempted to measure it, and found its diameter, by the micrometer, to be 1″ 562.' See plate XI. fig. 2. On the other hand, in passing through their superior semicircles, the satellites may be eclipsed in the same manner as our moon is to us, by passing through the shadow of Jupiter; and this is actually the case with the first, second, and third of these bodies; but the fourth, by reason of the largeness of its orbit, passes sometimes above or below the shadow, as is the case with our moon. The beginnings and endings of these eclipses are easily seen by a telescope when the earth is in a proper situation with regard to Jupiter and the sun; but when this or any other planet is in conjunction with the sun, the superior brightness of that luminary renders both it and the satellites invisible. From the time of its first appearing after a conjunction until near the opposition, only the immersions of the satellites into his shadow, or the beginnings of the eclipses are visible; at the opposition, only the occultations of the satellites, by going behind or coming before their primary, are observable; and from the opposition to the conjunction, only the immersions, or end of the eclipses are to be seen. For let S, plate VI. fig. 8, be the sun; I Jupiter and its shadow; A and P the earth, before and after the opposition of Jupiter; S *p* the path of the first satellite in the shadow; A *t* a tangent to Jupiter. When the first satellite enters the shadow, the apparent distance of it from the body of Jupiter is *t* A *s*; but at its emersion, the line *p* A passes through Jupiter, and therefore the emersion is not visible; but after opposition, the earth being at P, the emersion, and not the immersion, will be seen. The same things take place with respect to the second satellite. If *m u w* be the path of the third satellite, *m* A frequently lies without the body of Jupiter, and therefore both the immersion and emersion will be visible; the satellite disappears and re-appears again at a distance body of Jupiter, and on the same side.

126. This is exactly true in the first of which we can never see an immersior immediately subsequent emersion: and rarely that they can be both seen in the as in order to their being so, that satellite near one of its limits, at the same time planet is near its perihelion and quadrat the sun. With regard to the third, wher is more than 46° from conjunction with position to, the sun, both its immersions mediately subsequent emersions are vis they likewise are in the fourth, when the of Jupiter from conjunction or oppo 24°. It had long been suspected that tellites of this planet revolved on their ax Dr. Herschel has discovered that each revolves about its axis in the time of its tion round its primary; thus furnishing striking correspondence between the sat the other planets and the moon, the sat the earth. They must be very magnific jects to the inhabitants of Jupiter. The them appears to them four times larger t moon does to us, and goes through all the of the moon in the short space of fc hours, within which period it is itself e and causes an eclipse of the sun on the of Jupiter.

127. When Jupiter is in quadrature v sun, the earth is farthest out of the line tl ses through the centres of the sun and and therefore the shadow of the planet most exposed to our view: but even t body of the planet will hide from us one that part of the shadow which is neare through which the first satellite passes; the reason that, though we see the entr that satellite into the shadow, or its com from thence, as the earth is situate on the west side thereof, we cannot see then whereas the other satellites, going thro shadow at a greater distance from Jupit ingress and egress are both visible. Th of the satellites are inclined to the plane piter's orbit, as is evident from the unequ tion of the eclipses of the same satellit fourth satellite, like our own moon, is so in opposition to the sun, without being e The third and fourth satellites often disap the shadow, and re-appear again on tl side of Jupiter; but only the beginnings endings of the eclipses of the first and satellites are visible. The relative dist these moons from their primary, are sl plate VII. fig. 13.

127*. We cannot close this account of without noticing two curious results obta La Place, with respect to the satellites piter; results which agree with observati remarkable manner. The first is, that if m'', represent the mean motions of the f cond, and third satellites respective $m' + 2m'' - 3m''$, is always equal to The second is, that if l', l'', and l''' repre mean longitudes of the satellites, as se the centre of Jupiter, then $l' - 3l'' +$

Fig. 1.

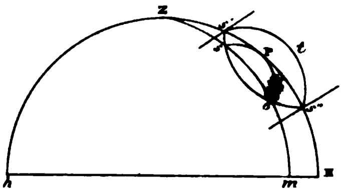


Fig. 2.

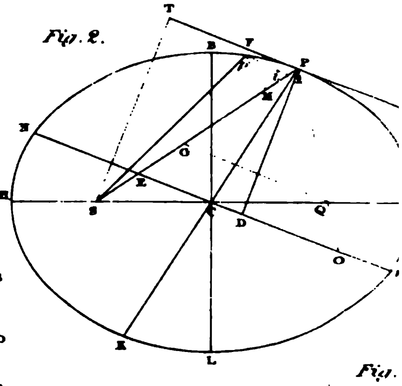
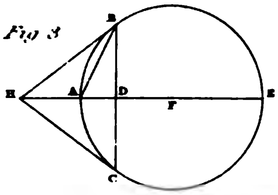


Fig. 3.



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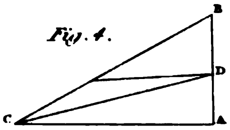

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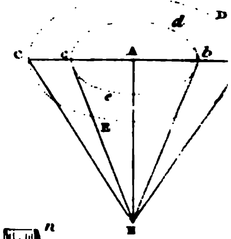


Fig. 6.

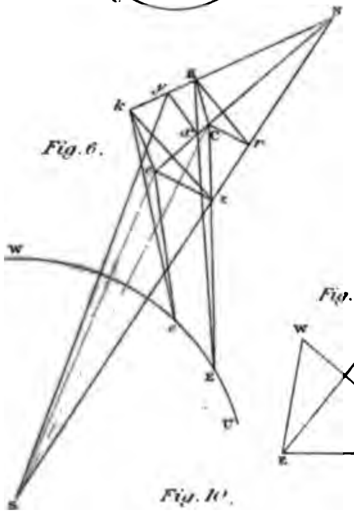


Fig. 7.

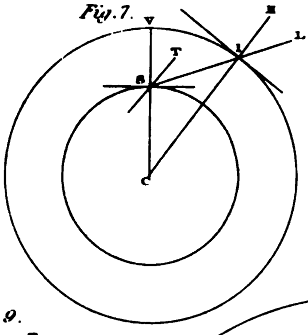


Fig. 8.

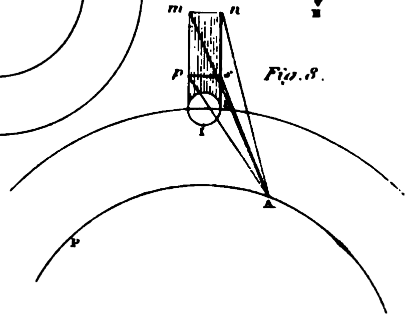


Fig. 9.

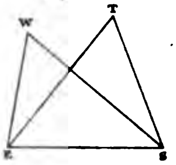


Fig. 10.

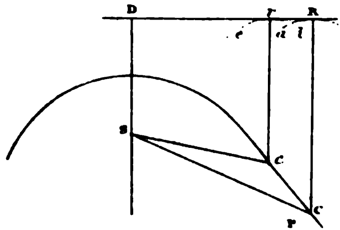


Fig. 11.

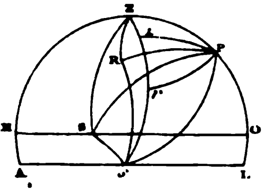


Fig. 12.

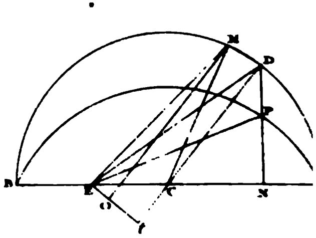


Fig. 13.

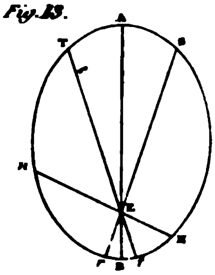


Fig. 14.

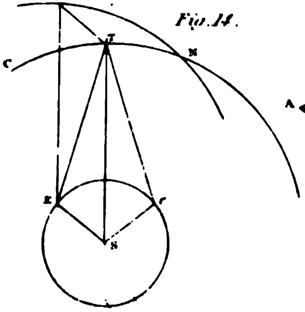
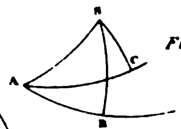


Fig. 15.



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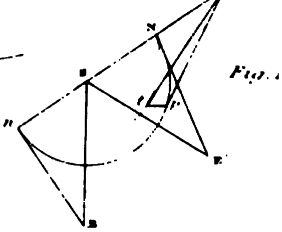

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ASTRONOMY.

PLATE VI

Fig. 1.

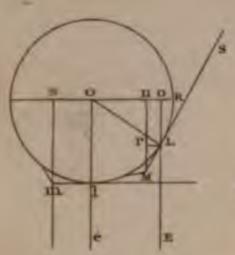


Fig. 2.

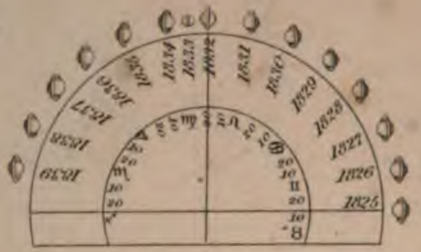


Fig. 3.

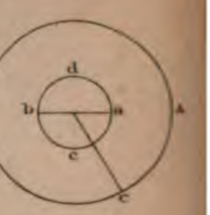
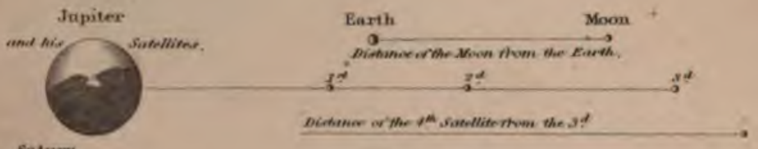


Fig. 13.



Jupiter
and his Satellites.
Earth
Moon
Distance of the Moon from the Earth.
1st
2d
3d
Distance of the 4th Satellite from the 3d

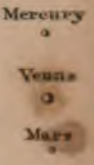


Fig. 14.

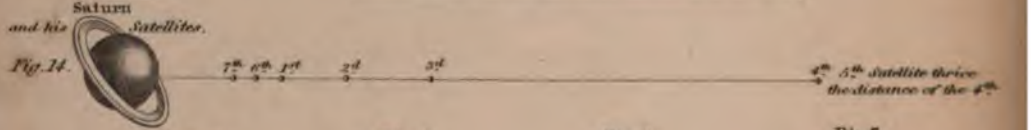


Fig. 4.

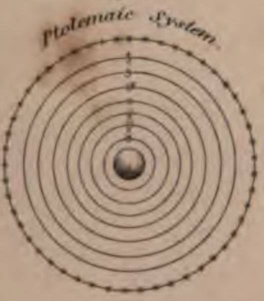


Fig. 5.

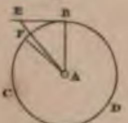


Fig. 6.

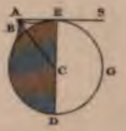


Fig. 7.

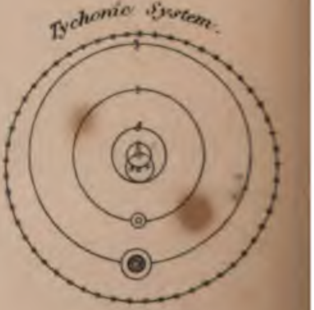


Fig. 8.

Fig. 9.

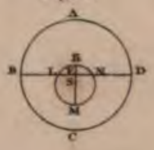


Fig. 10.

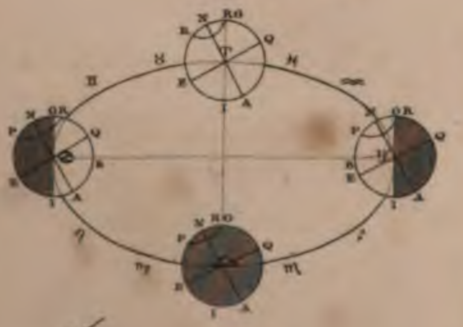


Fig. 12.

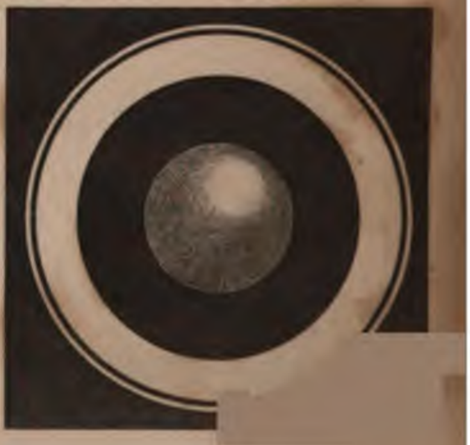
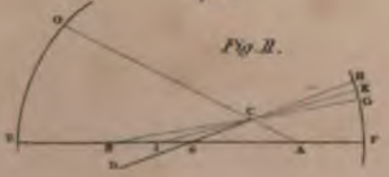


Fig. 11.



London, Published by Thomas Tegg, 73, Cheapside.

J. Shury sculpt.

ASTRONOMY.

PLANETARIUM BY JONES.

Fig. 1.

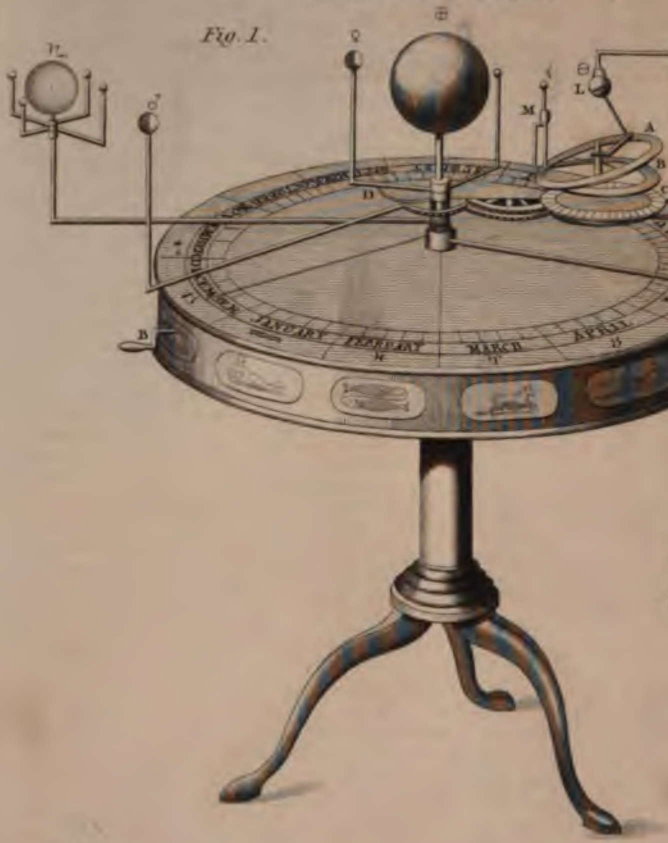


Fig. 5.

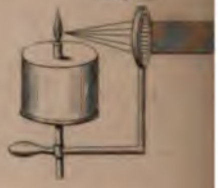


Fig. 4.

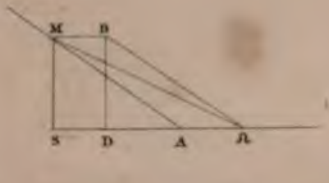
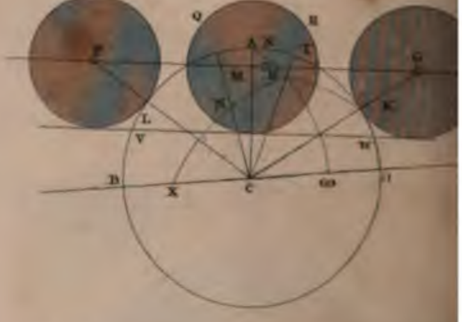


Fig. 6.



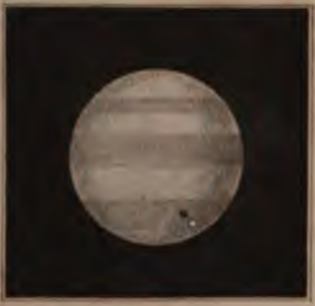


Fig. 2.

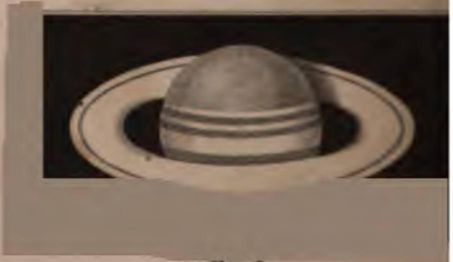


Fig. 3.

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llows from this theorem, that the
tellites of Jupiter can never all be
ther. For if it was possible, then
would be equal, and consequently
$l''' = 0$. When the second and
psed together, then $l'' = l'''$, and con-
$- l'' = 180$; hence, when the se-
rd satellites of Jupiter are eclipsed
ime, the first is always in conjunc-
piter. Various other interesting con-
f this theorem might be easily de-
we leave the ingenious reader to
out for himself. The relative dis-
satellites from their primaries are
te VII. fig.13.

m, when viewed through a good
akes a more remarkable appearance
he other planets. Galileo first dis-
ncommon shape, and from the dis-
e by him and other astronomers, it
this planet is surrounded by a broad
edge of which reflects little, if any,
ight to us, but the planes of the ring
ight in the same manner that the
does. If we suppose the diameter
be divided into three equal parts,
of the ring is about seven of these
ring is detached from the body of
ch a manner, that the distance be-
nnermost part of the ring and the
l to its breadth. If we had a view
and his ring with our eyes perpen-
e of the planes of the latter, we should
in plate VII. fig. 12; but our eye is
ch elevated above either plane as to
ual ray at right angies to it, nor in-
ever elevated more than about 30°
o that the ring being commonly
n oblique angle, appears of an oval
rough very good telescopes double,
ed, plate VII. fig. 13. and plate XI.
en the ring appears most open, its
eter appears about twice the length
st.

h the outward and inward rim are
to an ellipsis, more or less oblong,
the different degrees of obliquity with
viewed. Sometimes our eye is in
the ring, and then it becomes in-
ier because the outward edge is not
ect the sun's light, or more probably
s too thin to be seen at such a dis-
the plane of this ring keeps always
tself, that is, its situation in one part
t is always parallel to that in any
t disappears twice in every evolution
, that is about once in fifteen years;
net sometimes appears quite round
together. At other times the dis-
ixt the body of the planet and the
perceptible; and Mr. Whiston tells
Clarke's father saw a star through
;.

en Saturn appears round, if our eye
lane of the ring, it will appeai as a
ross the middle of the planet's disk;
ye be elevated above the plane of the
owy belt will be visible, caused by the shadow of the ring as well as by the interposition of part of it betwixt the eye and the planet. The shadow of the ring is broadest when the sun is most elevated, but its obscure parts appear broadest when our eye is most elevated above the plane of it. When it appears double, the ring next the body of the planet appears brightest; when the ring appears of an elliptical form, the parts about the ends of the largest axis are called the ansæ. These, a little before and after the disappearing of the ring, are of unequal magnitude: the largest ansæ is longer visible before the planet's round phase, and appears again sooner than the other. In the diagram, plate VII. fig. 2, are delineated the phases of the ring from its full appearance in 1825, to its disappearance in 1832, and its full re-appearance in 1839.

131. Dr. Herschel has found that the ring is double, or that there are two concentric rings; also that it has a motion of rotation in its own plane, its axis of motion being the same as that of Saturn himself, and its periodical time 10h. 32′ 15″, 4: But he thinks it probable that the concentric rings may not revolve in the same period. Their dimensions, and the space between them, he states in the following proportion to each other:—

	miles.
Inner diameter of the same ring . .	146,345
Outside diameter of ditto	184,393
Inner diameter of the larger ring . .	190,248
Outside diameter of ditto	204,883
Breadth of the ring	20,000
Breadth of the outer ditto	7,206
Breadth of the vacant space	2,839

132. Dr. Herschel concludes, from his observations on the ring, that its structure is such as to allow it to remain permanently in its present state; nor does he think it at all probable that the ring is of that changeable nature which some persons have imagined.

133. The same excellent astronomer, from a series of observations on the belts of Saturn, has concluded, that he revolves upon his axis in 10h. 16′ 0″, 4, that he has a dense atmosphere, and that his polar diameter is to his equatorial one as 10 to 11.

134. Saturn has, besides his ring, seven little secondary planets or satellites revolving round him. One of them, which till lately was reckoned the fourth in order from Saturn, was discovered by Huygens in 1655, by means of a telescope 100 feet long; and the others, viz. the first, second, third, and fifth, at different times by Cassini, between 1671 and 1684, by the help of glasses of 100 and 136 feet. The sixth and seventh have lately been discovered by Herschel, with his forty feet reflecting telescope, in 1787 and 1788. These he has called the sixth and seventh satellites, though they are nearer to Saturn than the other five; that the names may not be mistaken with regard to former observations of them.

135. The periodical revolutions and distances of these satellites expressed in semidiameters of that planet, and in English miles are as follow

No.	Periodic Times.				Distances in		Angles of Orbs.	
					Semi-diam.	Miles.		
1	1*d.*	21*h.*	18′	27″	4⅜	170,000	1′	27″
2	2	17	41	22	5½	217,000	1	52
3	4	12	25	12	8	303,000	2	36
4	15	22	41	13	18	704,000	6	18
5	79	7	48	0	54	2,050,000	17	4
6	1	8	53	9	3⅘	135,000	1	14
7	0	22	40	46	2⅝	107,000	0	57

136. The first four describe ellipses like those of the ring, and are in the same plane: their inclination to the orbit is from 30° to 31°. The fifth describes an orbit inclined from 17° to 18° to the orbit of Saturn, his plane lying between the ecliptic and those of the other satellites. Dr. Herschel observes, that the fifth satellite turns round its axis once, exactly in the time in which it revolves round the planet Saturn. In this respect, like the satellites of Jupiter, it resembles our moon, which does the same thing. The proportional distances of the seven satellites formerly known to astronomers, are shown in plate VII. fig. 13.

137. The apparent form of the ring of Saturn, and the form of the orbits of his first four satellites, may easily be found by means of the following table:

ARGUMENT.				
Long. of Saturn + 13° 43′.				
Degrees.	Signs. O. VI. — +	Signs. I. VII. — +	Signs. II. VIII. — 4.	Degrees.
0	0·000	0·260	0·451	30
3	0·027	0·284	0·464	27
6	0·054	0·306	0·476	24
9	0·081	0·328	0.486	21
12	0·108	0·348	0·495	18
15	0·135	0·368	0·503	15
18	0·161	0·387	0·509	12
21	0·187	0·405	0·514	9
24	0·212	0·421	0·518	6
27	0·236	0·437	0·520	3
30	0·260	0·451	0·521	0
Degrees.	XI. V. + — Signs.	X. IV. + — Signs.	IX. III. + — Signs.	Degrees.

138. To find the shape of Saturn's ring by this table, add his longitude to 13° 43′, and with the sum as an argument enter the table, the number from which will represent the shorter diameter, the longer diameter being reckoned a thousand. This, however, requires a small correction for the planet's latitude, which correction is obtai taking one-fourth of the latitude in minute applying it to the number in the table, w sign — when the latitude is north, but + south.

Example. What is the shape of Saturn' on January 25, 1826?

By the Nautical Almanack, his longitu that day, is 2ˢ 15° 23′, and latitude 1° Now 2ˢ 15° 23′ + 13° 43′, is 2ˢ 29° 6′ which, in the table, we find —·521, whic rected by + 26, one-fourth of the latitude —·495; or the shorter diameter is to the l as 495 to 1000. The sign + indicates th most distant half of the ring is north, and - the most distant half is south of the centre planet.

139. The Georgium Sidus, Hersch Uranus, was discovered by Herschel on 13th 1781. From certain inequalities i motion of Jupiter and Saturn, the existenc planet of considerable size, without the or either, had before been suspected. Its ap magnitude, as seen from the earth, is about seconds and a half; and as, from its di from the sun, it shines but with a pale li cannot often be seen with the naked eye diameter is about four times and a half that earth, and it revolves round the sun in 83 150 days, 18 hours. The want of light i planet, on account of its great distance fro sun, is supplied by no less than six moons, revolve round it in different periods. Bu is a remarkable peculiarity in the position orbits in which these moons revolve round primary, and in the direction in which th volve in their orbits. The orbits are nearl pendicular to the plane of the ecliptic, an revolve in them in a direction contrary order of the signs of the ecliptic. La Place theoretical considerations, concludes tha planet itself revolves on an axis very lit clined to the plane of the ecliptic; but th little hope that this theoretical deductio ever be either confirmed, or set aside, by vations on a body so very remote.

140. The periods of the revolution of t tellites, and the greatest angle of elongat their orbits, as seen from the earth, are con in the following table.

Satellite.	Period.			Elongation
	D.	H.	M.	
1	5	21	25	25·5″
2	8	17	1	33·9
3	10	23	4	38·57
4	13	11	5	44·22
5	38	1	49	88·44
6	107	16	40	176·88

141. We are unacquainted with any se ary cause that could have any influence gulating the respective distances of the p from the sun; but there certainly does relation which, from its singularity, it is di to believe quite accidental. This was fir

y professor Bode of Berlin, who re-
that a planet was wanting at the dis-
which the new planets have been dis-
to complete the relation. According
e distances of the planets may be ex-
nearly as follows, the earth's distances
sun being ten.

cury . . .	4	$= 4$
us . . .	$4+3\times 1$	$= 7$
h . . .	$4+3\times 2$	$= 10$
s	$4+3\times 2^2$	$= 16$
Planets .	$4+3\times 2^3$	$= 28$
ter . . .	$4+3\times 2^4$	$= 52$
rn . . .	$4+3\times 2^5$	$= 100$
chel . .	$4+3\times 2^6$	$= 196$

he comets, viewed through a telescope,
ery different appearance from any of
s. The nucleus, or star, seems much
They are to appearance surrounded
spheres of a prodigious size, often
times higher than the nucleus, and
s likewise different phases, like the

he head of a comet, seen through a
scope, appears to consist of a solid
d an atmosphere, that surrounds it.
part is frequently called the nucleus;
ugh a telescope, is easily distinguished
atmosphere or hairy appearance.
comet is generally attended with a
il, whereby it is distinguished from a
net; as it is also by its motion. Some-
tail only of a comet has been visible at
ere the head has been all the while
horizon; such an appearance is called
Whether the tail of a comet is caused
y the heat of the sun, it is always
to grow larger as it approaches, and to
as it recedes from that luminary.
f the tail were to continue of the same
would appear longer or shorter, accord-
different views of the spectator; for if
e in a line, drawn through the middle
l lengthways, or nearly so, the tail will
nguished from the rest of the atmos-
t the whole will appear round; if the
ittle out of that line, the tail will ap-
t (see plate VII. fig. 8); and it is called
l comet, when the tail hangs down to-
horizon, as in that figure. If the tail
t be viewed sideways, the whole length
en. It is obvious, that the nearer the
the tail, the greater will be its apparent

he tails of comets often appear bent
V. fig. 12, 13). This is probably
the resistance of the æther; which,
xtremely small, may have a sensible
so thin a vapour as the tail consists of.
ing is seen only when the earth is not
ne of the orbit of the comet continued.
t plane passes through the eye of the
the tail appears straight. See plate
11.
he fixed stars, when viewed through the
opes, appear not in the least magnified,
diminished, on account, as is thought
hat the telescope takes off that twinkling
e they make to the naked eye; but by others more probably, that the telescope tube excludes a quantity of the rays of light, which are not only emitted from the particular stars themselves, but by many thousands more, which falling upon our eyelids and the aerial particles about us, are reflected into our eyes so strongly as to excite vibrations, not only on those points of the retina where the images of the stars are formed, but also in other points at the same distance round about. This, without the telescope, makes us imagine the stars to be much bigger than when we see them only by a few rays coming directly from them, so as to enter our eye without being intermixed with others.

148. The number of stars appear prodigiously increased through the telescope; seventy stars have been counted in the constellation called Pleiades, and no fewer than 2000 in that of Orion. The late improvements of Herschel, however, have shown the number of stars to be exceedingly beyond even what the discoveries of former astronomers would induce us to suppose. He has also shown that many, which to the eye, or through ordinary glasses, appear single, do in fact consist of two or more stars; and that the galaxy, or milky way, owes its light entirely to multitudes of small stars placed so close, that the naked eye, or even ordinary telescopes, cannot distinguish them.

149. The nebulæ, or small whitish specks, discoverable by telescopes in various parts of the heavens, are owing to the same cause. Former astronomers could only reckon 103; but Herschel has discovered upwards of 1250. He has also discovered a species of them, which he calls planetary nebulæ, on account of their brightness, and shining with a well-defined disk

SECT. III.—CONCLUSIONS DRAWN FROM THE APPEARANCES OF THE SUN AND PLANETS.

150. There is an appearance in the heavens, termed semita luminosa, or the zodiacal light, which is now generally supposed to be owing to the sun's atmosphere. This was first discovered by Cassini in 1683. It is something like the milky way, a faint twilight, or the tail of a comet, thin enough to let stars be seen through it, and seems to surround the sun in the form of a lens, the plane whereof is nearly co-incident with that of the sun's equator. It is seen stretched along the zodiac, and accompanies the sun in his annual motion through the twelve signs. Each end terminates in an angle of about 21°: the extent of it in length from either of the angular points varies from 50 to 100°; it reaches beyond the orbit of Venus, but not so far as that of the earth. The breadth of it near the horizon is also various; from 12° almost to 30°: near the sun, where it may reasonably be supposed to be broadest, it cannot be seen.

151. This light is weakest in the morning, and strongest at night; disappearing in full moon-light, or in strong twilight, and therefore is not at all visible about midsummer, in places so near either of the poles as to have their twilight all the night, but may be seen in those places, in the middle of winter, both morning and evening, as it may in places under and near the equator, all the year round. In north latitude it is most conspicuous after the evening twilight,

about the latter end of February, and before the morning twilight in the beginning of October; for at those times it stands most erect above the horizon, and is therefore clearest from the thick vapours of the twilight. Besides the difference of real extension of this light in length and breadth at different times, it is diminished by the nearness of any other light in the sky; not to mention, that the extent of it will be differently determined by different spectators, according to the goodness of their eyes.

152. Cassini supposed that, as by the rotation of the sun, some gross parts are thrown up on his surface, whereof spots and nebulosities are formed; so the great rapidity wherewith the equatorial parts are moved, may throw out, to a considerable distance, a number of particles of a much finer texture, of sufficient density to reflect light. That this light was caused by an emanation from the sun, similar to that of the spots, he thought probable from the following observation: That after the year 1688, when this light began to grow weaker, no spots appeared upon the sun; whereas, in the preceding years, they were frequently seen there; and that the great inequality in the intervals between the times of the appearances of the solar spots, has some analogy to the irregular returns of weakness and strength in this light, in like circumstances of the constitution of the air, and of the darkness of the sky. But the atmosphere of no planet can extend beyond the point at which the centrifugal force arising from its evolution is equal to the force of gravity, and that distance is equal to the radius of a planet's orbit, which revolves in the same time that the sun revolves on his axis. Now the sun revolves in about 25 days, and Mercury in about eighty-eight, therefore the solar atmosphere can never extend to the orbit of Mercury, while the zodiacal light, whatever it is, certainly extends much farther. This consideration certainly militates strongly against the hypothesis of the zodiacal light being connected with the solar atmosphere.

153. He was also of opinion that this light in the zodiac, as it is subject to great increase at one time and diminution at another, may sometimes become quite imperceptible; and thought this was the case in 1665, 1672, and 1681, when he saw nothing of it, though he surveyed with great attention those parts of the heavens where, according to his theory, it must have appeared, if it had been as visible then as it was in others. He cites also passages out of several authors, both ancient and modern, which make it probable that it had been seen, both in former and latter ages, but without being sufficiently attended to, or its nature enquired into.

154. As to the solar spots, Dr. Long informs us, that 'they do not change their places upon the sun, but adhere to his surface, or float in his atmosphere, very near his body; and if there be twenty spots upon him at a time, they all keep in the same situation with respect to one another; and, as long as they last, are carried round in the same manner: by the motion of the spots therefore we learn, what we should not otherwise have known, that the sun is a globe, and has a rotation about his axis.'

155. Notwithstanding this, he
wards, 'The spots, generally spea
said to adhere to the sun, or to b
as to be carried round upon hi
nevertheless sometimes, though r
has been seen to move with a v
different from the rest; spots that
parallels, have appeared to be carri
keeping always the same distance, b
ing nearer to each other; and wh
moved in the same parallel, the
been observed to overtake and pass
The revolution of spots near the e
sun, is shorter than of those that
tant from it.' The apparent chang
the spots, as they approach the circ
the disk, according to this author,
proof of the sun's rotation round
that they either adhere to the surface
nary, or are carried round his atm
near his surface.

156. The time of the apparent re
spot being known, tne true time
round upon the sun may be thus fo
VII. fig. 3. the arc A C, which, in
May, the earth goes through in h
days 12 hours and 20 minutes, is
arc *a c* being equal to A C: the app
tion of a spot is the whole circle *a*
with the addition of the arc *a c* of 2
makes 386° 22′: then say, as 386°
12 h. 20′; so is 360° to 25 d. 15 h.
time of the rotation of the sun as
seen from a fixed star.

157. The angle of intersection
equator with the ecliptic is but
never more, according to Scheiner,
less than 6°; for which reason he s
though Cassini makes it 7½. This p
cuts the ecliptic in two opposite
are called the sun's nodes, being 1
10° of ♐; and two points in the
from the nodes, may be called the
are 10° of ♍ and 10° of ♓. Wh
in either of these nodes, the equat
if visible, would appear as a straig
by reason of the vast distance of the
all his parallels would likewise app
lines; but, in every other situation
the equator and parallels of the
visible, appear as ellipses growin
farther the earth is from the nodes,
all when the earth is in one of her

158. There has been no small specu
ing the nature and formation of th
Some have thought that the sun
body, mountainous and uneven as
covered all over with a fiery and lu
that this fluid is subject to ebbing
after the manner of our tides, so as
leave uncovered the tops of rocks o
appear like black spots; and that
ties about them are caused by a
Others have imagined that the flui
us so much light and heat, contain
solid globe, wherein are several vol
like Ætna or Vesuvius, from tim
up quantities of bituminous matt
face of the sun, and form those sp

seen thereon; and that, as this matter is gradually consumed by the luminous fluid, the spots disappear for a time, but are seen to rise again in the same places when these volcanoes cast up new matter. A third opinion is, that the sun consists of a fiery luminous fluid, wherein are immersed several opaque bodies of irregular shapes; and that these bodies, by the rapid motion of the sun, are sometimes buoyed or raised up to the surface, where they form the appearance of spots, which seem to change their shapes according as different sides of them are presented to the view. A fourth opinion is, that the sun consists of a fluid in continual agitation; that, by the rapid motion of this fluid, some parts more gross than the rest are carried up to the surface of the luminary, like the scum of melted metal rising up to the top in a furnace; that these scums, as they are differently agitated by the motion of the fluid, form themselves into those spots we see on the solar disk; and, besides the optical changes already mentioned, grow larger, are diminished in their apparent magnitude, recede a little from, or approach nearer to, each other, and are at last entirely dissipated by the continual rapid motion of the fluid, or are otherwise consumed or absorbed.

159. Dr. Wilson, in the sixty-fourth volume of the Philosophical Transactions, advances a new opinion, viz. that they are hollows in the surface of the luminary. On this supposition he offers some queries and conjectures concerning the nature of the sun himself. He asks, Whether it is not reasonable to think, that the vast body of the sun is made up of two kinds of matter very different in their qualities; that by far the greatest part is solid and dark; and that this dark globe is encompassed with a thin covering of that resplendent substance, from which the sun would seem to derive the whole of his vivifying heat and energy!

160. This, if granted, will afford a satisfactory solution of the appearance of spots; because, if any part of this resplendant surface shall be by any means displaced, the dark globe must necessarily appear; the bottom of the cavity corresponding to the nucleus, and the shelving sides to the umbræ. The shining substance, he thinks, may be displaced by the action of some elastic vapour generated within the substance of the dark globe. This vapour swelling into such a volume as to reach up to the surface of the luminous matter, would thereby throw it aside in all directions: and as we cannot expect any regularity in the production of such a vapour, the irregular appearance and disappearance of the spots is by that means accounted for; as the reflux of the luminous matter must always occasion the dark nucleus gradually to decrease, till at last it becomes indistinguishable from the rest of the surface.

161. But an objection occurs, that, on this supposition, the nucleus of a spot, whilst on the decrease, should always appear nearly circular, by the gradual descent of the luminous matter from all sides to cover it. To this Dr. Wilson replies, that in all probability the surface of the dark globe is very uneven and mountainous, which prevents the regular reflux of the shining matter; and this, he thinks, is rendered very probable by the enormous mountains and cavities which are observed on the moon; and why, says he, may there not be the same on the surface of the sun? He thinks his hypothesis also confirmed by the dividing of the nucleus into several parts, which might arise from the luminous matter flowing in different channels in the bottom of the hollow.

162. The appearance of the umbræ after the nucleus is gone, he thinks, may be owing to a cavity remaining in the luminous matter, though the dark globe is entirely covered. As to a motion of the spots, distinct from what they are supposed to receive from the rotation of the sun round his axis, he says he never could observe any, except what might be attributed to the enlargement or diminution of them when in the neighbourhood of one another. 'But,' says he, 'what would farther contribute towards forming a judgment of this kind, is the apparent alteration of the relative place, which must arise from the motion across the disk on a spherical surface; a circumstance which I am uncertain if it has been sufficiently attended to.'

163. Dr. Wilson's hypothesis is further confirmed by the disappearance of the umbræ on the sides of spots contiguous to one another; as the action of the elastic vapour must necessarily drive the luminous matter away from each, and thus as it were accumulate it between them, so that no umbræ can be perceived. As to the luminous matter itself, he conjectures, that it cannot be any very ponderous fluid, but that it rather resembles a dense fog which broods on the surface of the sun's dark body.

164. Dr. Wilson's general conclusion is, that, 'According to the view of things given in the foregoing queries, there would seem to be something very extraordinary in the dark and unignited state of the great internal spot of the sun. Does not this, (he asks), seem to indicate that the luminous matter that encompasses it derives not its splendor from any intensity of heat? For, if this were the case, would not the parts underneath, which would be perpetually in contact with that glowing matter, be heated to such a degree as to become luminous and bright? At the same time it must be confessed, that although the internal globe was in reality much ignited, yet when any part of it forming the nucleus of a spot is exposed to our view, and is seen in competition with a substance of such amazing splendor, it is no wonder that an inferior degree of light, should in these cases, be unperceivable.

165. As to the moon, it is allowed on all hands, that there are prodigious inequalities on her surface. This is proved by looking at her through a telescope, at any other time than when she is full; for then there is no regular line bounding light and darkness; but the confines of these parts appear as it were toothed and cut with innumerable notches and breaks; and even in the dark part, near the borders of the lucid surface, there are seen some small spaces enlightened by the sun's beams. Upon the fourth day after new moon, there may be perceived some shining points like rocks or small islands within the dark

body of the moon; and not far from the confines of light and darkness, there are observed other little spaces which join to the enlightened surface, but run out into the dark side, which by degrees change their figure, till at last they come wholly within the illuminated space, and have no dark parts round them at all. Afterwards many more shining spaces are observed to arise by degrees, and to appear within the dark side of the moon, which, before they drew near to the confines of light and darkness, were invisible, being without any light, and totally immersed in the shadow. The contrary is observed in the decreasing phases, where the lucid spaces which joined the illuminated surface by degrees recede from it; and, after they are quite separated from the confines of light and darkness, remain for some time visible, till at last they also disappear. Now it is impossible that this should be the case, unless these shining points were higher than the rest of the surface, so that the light of the sun may reach them.

166. Astronomers have endeavoured to measure the height of these lunar mountains, in the following manner. Let E C D, Plate VII. fig. 6, be the hemisphere of the moon illuminated by the sun; E C D the diameter of the circle bounding light and darkness, and A the top of a hill within the dark part when it first begins to be illuminated. Observe with a telescope the proportion of the right line A E, or the distance of the point A from the lucid surface to the diameter of the moon E D; and because in this case the ray of light E S touches the globe of the moon, A E C will be a right angle, and therefore in the triangle A E C having the two sides A E and E C, we can find the third side A C; from which deducting B C or E C, there will remain A B the height of the mountain. By this mode of measuring, which would be just if the line A E could be taken accurately, the height of St. Catherine would be nearly 8¾ miles, if according to Riccioli its top was about a sixteenth part of the moon's diameter distant from the confines of the lucid surface. But by the more accurate observations and just calculations of Herschel, this disproportionate height appears to be ill founded, and the generality of the lunar mountains do not exceed half a mile in perpendicular elevation. He thus calculates their heights: Let S L M or *s l m*, fig. 1, be a line drawn from the sun to the mountain, touching the moon at L or *l*, and the mountain at M or *m*. Then, to an observer at E or *e*, the lines L M, *l m*, will not appear of the same length, though the mountain should be of an equal height; for L M will be projected into *on*, and *lm* into O N. But these are the quantities that are taken by the micrometer when we observe a mountain to project from the line of illumination. From the observed quantity *o n*, when the moon is not in her quadrature, to find L M, we have the following analogy. The triangles *o* O L, *r* M L are similar; therefore L *o* : LO : : L *r* : L M, or $\frac{\mathrm{L\,O} \times o\,n}{\mathrm{L}\,o} = \mathrm{LM}$: but L O is the radius of the moon, and L *r* or *on* is the observed distance of the mountain's projection; and L *o* is the sine of the angle R O L $=$ *o* L S; which we may take to be the distance of the sun from the moon without any material error, and which therefore we may find at any given time from an ephemeris.

167. Some modern astronomers have discovered a still greater similarity between the lunar mountains and those of our earth; viz. that some of them are really volcanoes, and emit fire, as ours do. An appearance of this kind was discovered some years ago by Ulloa, in an eclipse of the sun. It was a small bright spot like a star near the margin of the moon, and which he at that time supposed to have been a hole with the sun's light shining through it. Succeeding observations, however, have induced astronomers to attribute appearances of this kind to the eruption of volcanic fire: and Herschel has particularly observed several eruptions of the lunar volcanoes, and similar appearances have been more recently noticed by that acute and accurate observer, captain Henry Kater.

168. Many conjectures have been formed respecting the nature of the moon's substance; some have imagined, that, besides the light reflected from the sun, the moon has also some obscure light of her own, by which she would be visible without being illuminated by the sun-beams. In proof of this it is urged, that during the time of even total eclipses the moon is still visible, appearing of a dull red color, as if obscured by a great deal of smoke. In reply to this, it has been advanced, that this is not always the case; the moon sometimes disappearing totally in the time of an eclipse, so as not to be discernible by the best glasses, while little stars of the fifth and sixth magnitudes were distinctly seen as usual; and when the moon is visible in a total eclipse, a sufficient reason may be assigned for this appearance from the refraction of the sun's rays through our atmosphere, which are reflected back to the earth by the otherwise dark surface of the moon.

169. Various speculations have also been indulged concerning the spots on the moon's surface. Some philosophers have been so taken with the beauty of the brightest places observed in he disk, that they have imagined them to be rocks of diamonds; and others have compared them to pearls and precious stones. Keill, and the greate part of astronomers are now of opinion, that thes are only the tops of mountains, which, by reaso of their elevation, are more capable of reflectin the sun's light than others which are lower. Th duskish spots, he says, cannot be seas, nor an thing of a liquid substance; because, when ex amined by the telescope, they appear to consi of an infinity of caverns and empty pits, whos shadows fall within them, which can never be th case with seas, or any liquid substance; but eve within these spots, brighter places are also to b observed; which, according to his hypothesi ought to be the points of rocks standing u within the cavities.

170. The existence of the lunar atmospher so long a subject of controversy, is now de cidedly set at rest. Schroeter of Lilienthal ha observed phenomena precisely analogous to th twilight, and which can in no way be accounte for independently of atmospheric refraction. T has also, as he says, observed several obscur tions, and returning serenity, and other chang in the lunar atmosphere. In the occultation

Jupiter by the moon on April 5th, 1824, Mr. Ramage of Aberdeen, and Captain John Ross, R.N. at Stranraer, with each one of Mr. Ramage's splendid reflecting telescopes, observed the disk of Jupiter to be decidedly distorted at the time of its approach to the edge of the moon; and precisely similar appearances were noticed by Mr. Comfield of Northampton, and Mr. Wallis, lecturer on astronomy, on the occultation of Saturn by the moon, on October 30th, 1825.

This question, therefore, having been settled by the most satisfactory of all tests, we deem it unnecessary to enter into the arguments which were wont to be advanced on either side of the question, before sufficient data were obtained for determining it in any way.

171. It has been a question whether the moon and other planets are inhabited. The answers given to it in the negative depend on the position, that human beings could not exist in any of the planets on account of their distance from the sun, and consequent inequality of heat to that which the inhabitants of the earth experience; and the want of an atmosphere in the moon, or the rarity of it, would as effectually preclude that body from being a fit habitation for man. But in reply it is argued, and with reason, that the same power which could make the earth a fit habitation for the animals upon it, could also adapt the organs of other animals to their various situations in the planets; and as the earth teems with life of all kinds, it is probable, that, as there is so great an analogy between it and the planets in other respects, the same analogy prevails with respect to life and inhabitants.

SECT. IV. CONJECTURES AND CONCLUSIONS RESPECTING COMETS.

172. None of the celestial bodies have given rise to more speculation and conjecture than comets. Their strange appearance has in all ages been a matter of terror to the vulgar, who uniformly have looked upon them as bad omens, and forerunners of war, pestilence, &c. Others, less superstitious, supposed them to be meteors formed in the higher regions of the air.

Some part of the modern doctrine concerning them, however, was received in the ancient Italic and Pythagorean schools; for they held them to be so much of the nature of planets that they had their periodical times of appearing; but they were out of sight for a long time, while they were carried aloft at an immense distance from the earth, but became visible when they descended into the lower regions of the air, and thus were nearer to us.

It would be as endless as useless to detail the various conjectures which in the dark ages were formed respecting the nature of comets; and the various extravagant postulata by which each theorist sought to reconcile their appearances with his explanation. Aristotle conceived them to be meteoric bodies; Kepler huge animals, that swam round the sun like fishes; and Bodin imagined that they are spirits, which, having long dwelt on the earth, are about to be translated to the skies.

A celebrated comet, however, which appeared in 1577, enabled Tycho Brahe to determine that, at any rate, these bodies were at an immense distance; as from many careful observations he found that that comet had no sensible diurnal parallax; and Kepler discovered, from his own observations and those of his master, Tycho, that the comets did not, as had been supposed, move in straight lines, but in paths concave towards the sun, and he conceived that their orbits were parabolas.

At length, from observations made on the great comet of 1680, Sir Isaac Newton found that these bodies, like the planets, move round the sun in elliptical orbits. This comet was seen for twenty-one days in its passage towards the sun, and for nearly three months as it receded from that luminary. The most careful observations were made to determine its place, and the conclusions deduced from these observations are confirmed by observations made on all that have been well-observed since.

173. It has been remarked that a greater number of comets are seen towards the sun than in the opposite hemisphere; the reason of which will easily appear from fig. 9, plate VII. wherein S represents the sun, E the earth, A B C D the sphere of the fixed stars; and because comets neither reflect light enough to be visible, nor emit tails conspicuous enough to attract our notice, till they come within the planetary regions, commonly a good way within the sphere of Jupiter; let K L M N be a sphere concentric to the sun, at such a distance from him, that no comet can be seen by us till it come within that distance: through E draw the plane B D perpendicular to S E, which will divide the sphere K L M N into two hemispheres, one of which, BCD, is towards the sun, the other D A B, opposite. Now it is manifest, that the spherical portion L M N, which is in the hemisphere B C D towards the sun, is larger than the portion N K L in the hemisphere opposite to him; and consequently a greater number of comets will appear in the hemisphere B C D than in that marked D A B.

174. Although the orbs of all comets are very eccentric ellipses, there are vast differences among them. Excepting Mercury and Pallas, there are no great differences among the planets either as to the eccentricity of their orbits, or the inclination of their planes; but the planes of some comets are almost perpendicular to others, and some of their ellipses are much wider than others. The narrowest ellipsis of any comet hitherto observed was that of 1680. There is also a much greater inequality in the motion of the comets than of the planets; the velocity of the former being incomparably greater in their perihelion than in their aphelion; but the planets are but very little accelerated.

175. There is now no question among astronomers, that comets are opaque bodies enlightened by the sun. Their perihelion distances from the sun are exceedingly various, some being not more than one-fifth, and others upwards of four-times the mean distance of the earth. Their diameters too differ very greatly Their apparent diameters of course vary with their distance; and some have supposed that those apparently preternatural darknesses, o

which several are recorded in history, may have been caused by the interposition of a comet between the earth and the sun, at a time when, from its proximity to the earth, its apparent diameter was greater than the sun's, and when its apparent motion was in the same direction as the sun's The diameter of the comet of 1744, when at the distance of the sun from us, was about one minute, hence its real diameter was about three times that of the earth. The diameter of their atmosphere is however often ten or fifteen times as great as that of the nucleus.

176. The tails of comets have given rise to various conjectures; but though it is apparent that they are in some way connected with the sun, we know as yet absolutely nothing of either their cause, or their uses. Perhaps the most rational conjecture that has been made respecting them is that of Euler, who imagines that on a comet's approaching the sun the impulse of the solar rays may drive the finer particles of the comet's atmosphere in a direction of course opposite to the sun, and that these particles become visible in the shape of a tail, which, from the resistance it may meet with moving obliquely through the æther, may put on that curved appearance which the tails are often observed to assume. If this hypothesis were true, we might conceive that the velocity of a comet may be so great, that a tail may be produced opposite to the sun before the previously formed one can overtake it. This agrees with what is recorded of the comet of 1744, which is said to have had several tails when near its perihelion.

177. Mr. Whiston has conjectured that the deluge, of which, in the sacred writings, we have the only authentic record, but of which the annals of most nations have traditionary accounts, was produced by the near approach of a comet, whose atmosphere had been attracted by the earth; and he further surmises, that the final catastrophe foretold in the scriptures may be produced by the approach of a comet prodigiously heated in its perihelion. We pretend not, however, on such subjects as these, to penetrate the secrets of Almighty wisdom, which can produce its own ends, by means of which we have no conception.

178. On looking over the catalogue of ancient comets, Dr. Halley found that there was considerable similarity in the elements of the orbits, and in the periodic times of three which appeared in 1531, 1607, and 1682; and he strongly surmised that these three comets had only been several returns of the same comet, which might be expected to return again about the end of 1758 or the beginning of 1759. Clairault applied himself with great diligence and success to the investigation of the elements of these comets, which he too conceived to be the same; and he predicted that it would be in perihelion on April 13th, 1759, and it actually was in its perihelion on the 13th of March, differing about a month from the predicted time. This comet may be expected again in 1835.

179. Clairault found, by applying the principles of physics to the computation of this comet's motion, that its last period was lengthened about 100 days by the action of Saturn, and about 518 days by that of Jupiter. And, as we know not how the orbits of these eccentric bodies may be affected by their mutual attractions among themselves, it is probable that many ages will elapse before any very accurate knowledge of the periodic times of many of them will be obtained. Much attention however is at present paid to this branch of astronomy; and, the consequence has been, that a visit of a comet to our regions is found to be an event of very frequent occurrence. In the year 1825 not less than five different comets were observed.

180. The Astronomical Society of London, at their anniversary in February 1824, voted a gold medal to M. Rumker, for his re-discovery of a comet, which was first discovered by M. Guke, and has been called by his name. This comet had been seen, in an intervening return in 1818, by M. Pons, and the astronomical society voted him a silver medal as a token of their approbation of the industry and talent with which he has applied to this interesting branch of the science.

In connexion with this subject too, we cannot help noticing a most profound and ingenious paper by M. Masotti, on the resistance of æther, as deduced from the irregularities of the motion of Guke's comet.

SECT. V.—CONJECTURES AND CONCLUSIONS RESPECTING THE FIXED STARS.

181. Astronomers have supposed the innumerable multitude of fixed stars to be so many suns, each of which is attended by a certain number of planets or habitable worlds like our own, as well as visited by comets. The strongest argument for this hypothesis is, that the stars cannot be magnified by a telescope on account of their immense distance; whence it is concluded that they shine by their own light, and are therefore so many suns; each of which we may suppose to be equal, if not superior, in lustre and magnitude to our own. They are not supposed to be at equal distances from us, but to be more remote in proportion to their apparent smallness. This supposition is necessary to prevent any interference of their planets, and thus there may be as great a distance between a star of the first magnitude and one of the second apparently close to it, as between the earth and the fixed stars first mentioned.

182. Others object, that the disappearance of some of the fixed stars is a demonstration that they cannot be suns, as it would be in the highest degree absurd to think that God would create a sun which might disappear of a sudden, and leave its planets and their inhabitants in endless night. But this argument will have no weight with those who believe in the doctrines of revelation; which assures us that our world will come to an end, and that our sun will be deprived of his light; and consequently that all the planets which circulate around him will be involved in darkness.

183. In short, there is nothing inconsistent with either scripture or reason in supposing, that while infinite space is universally filled with illuminating suns and circulating planets, each world, or rather each solar system of worlds, has

its own periods of creation, duration, and final consummation; as we are assured ours has had, and will have. And the discoveries of astronomers respecting old stars disappearing, and new ones being observed, are perfectly consistent with the doctrines of creation and dissolution, which all Christians profess to believe, with regard to our own solar system and the globe we inhabit.

184. Some, however, have thought that the variable stars which disappear for a time, are planets, which are only visible during some part of their course. But this their apparent immobility, notwithstanding their decrease of lustre, will not allow us to think. Some have imagined that one side of them may be naturally much darker than the other, and when by the revolution of the star upon its axis, the dark side is turned towards us, the star becomes invisible, and for the same reason, after some interval, resumes its former lustre.

185. M. Maupertius is of opinion that some stars, by their prodigiously quick rotations on their axes, may not only assume the figures of oblate spheroids, but that by the great centrifugal force arising from such rotations, they may become of the figures of mill-stones, or be reduced to flat circular planes, so thin as to be quite invisible when their edges are turned towards us; as Saturn's ring is in such positions. But when very eccentric planets or comets go round any flat star, in orbits much inclined to its equator, the attraction of the planets or comets in their perihelions must alter the inclination of the axis of that star; on which account it will appear more or less large and luminous, as its broad side is more or less turned towards us. And thus he imagines we may account for the apparent changes of magnitude and lustre in those stars, and likewise for their appearing and disappearing.

186. In the Philosophical Transactions for 1783, Mr. Mitchell, in proposing a method of determining the distance, magnitude, &c. of the fixed stars, by the diminution of the velocity of their light, should any such thing be discovered, supposes that by far the greater part, if not all of them, are systems of stars so near each other, as probably to be liable to be affected sensibly by their mutual gravitation; and that it is therefore not unlikely that the periods of the revolutions of some of these about their principals (the smaller ones being upon this hypothesis to be considered as satellites to the others), may some time or other be discovered. And the recent observations of Mr. Herschel and Mr. South on double stars, when compared with those made by Sir William Herschel many years ago, show decidedly that many of these double stars do certainly revolve round each other.

187. Herschel, improving on Mitchell's idea of the fixed stars being collected into groups, and assisted by his own observations with the extraordinary telescopic powers already mentioned, has suggested a theory concerning the construction of the universe entirely new and singular. It had been the opinion of former astronomers, that our sun, besides occupying the centre of the system which properly belongs to him, occupied also the centre of the universe: but Herschel is of a different opinion.

188. The observations on which this theory is founded, were made with a Newtonian reflector of twenty feet focal length, and an aperture of eighteen inches. With this powerful telescope he first began to survey the Via Lactea, and found that it completely resolved the whitish appearance into stars, which the telescopes he formerly used had not light enough to do. The portion he first observed was that about the hand and club of Orion; in which he found an astonishing multitude of stars, whose number he endeavoured to estimate by counting many fields (or apparent spaces of the heavens, which he could see at once through his telescope), and computing from a medium of these how many might be contained in a given portion of the milky way. In the most vacant place to be met with in that neighbourhood, he found 63 stars; other six fields contained 110, 60, 70, 90, 70, and 74 stars; a medium of all which gave 79 for the number of stars to each field. Thus he found that by allowing 15′ for the diameter of his field of view, a belt of 15° long and 2° broad, which he had often seen pass before his telescope in an hour's time, could not contain less than 50,000 stars, large enough to be distinctly numbered: besides which he suspected twice as many more, which could be seen only now and then by faint glimpses, for want of sufficient light.

189. The doctor's success within the milky way soon induced him to turn his telescope to the nebulous parts of the heavens, of which an accurate list had been published in the Connoissance des Temps for 1783 and 1784. Most of these yielded to a Newtonian reflector of twenty feet focal distance, and twelve inches aperture; which plainly discovered them to be composed of stars, or at least to contain stars, and to show every other indication that they consisted of them entirely.

190. 'The nebulæ,' says he, 'are arranged into strata, and run on to a great length; and some of them I have been able to pursue, and to guess pretty well at their form and direction. It is probable enough that they may surround the whole starry sphere of the heavens not unlike the milky way, which undoubtedly is nothing but a stratum of fixed stars; and as this latter immense starry bed is not of equal breadth or lustre in every part, nor runs on in one straight direction, but is curved, and even divided int two streams along a very considerable portion of it, we may likewise expect the greatest variety in the strata of the clusters of stars and nebulæ.

191. 'One of these nebulous beds is so rich, that in passing through a section of it in the time of only thirty-six minutes, I have detected no less than thirty-one nebulæ, all distinctly visible upon a fine blue sky. Their situation and shape, as well as condition, seem to denote the greatest variety imaginable. In another stratum, or perhaps a different branch of the former, I have often seen double and treble nebulæ variously arranged; large ones with small seeming attendants; narrow, but much extended lucid nebulæ or bright dashes; some of the shape of a fan, resembling an electric brush issuing from

a lucid point; others of the cometic shape, with a seeming nucleus in the centre, or like cloudy stars, surrounded with a nebulous atmosphere; a different sort again contain a nebulosity of the milky kind, like that wonderful inexplicable phenomenon about θ Orionis; while others shine with a fainter mottled kind of light, which denotes their being resolvable into stars.

192. ' It is very probable that the great stratum called the milky way, is that in which the sun is placed, though perhaps not in the very centre of its thickness. We gather this from the appearance of the galaxy, which seems to encompass the whole heavens, as it certainly must do if the sun is within the same. For suppose a number of stars arranged between two parallel planes, indefinitely extended every way, but at a given considerable distance from one another, and calling this a sidereal stratum; an eye placed somewhere within it will see all the stars in the direction of the planes of the stratum projected into a great circle, which will appear lucid on account of the accumulation of the stars, while the rest of the heavens at the sides will only seem to be scattered over with constellations, more or less crowded according to the distance of the planes, or number of stars contained in the thickness or sides of the stratum.

193. ' From appearances,' Dr. Herschel continues, ' we may infer that the sun is most likely placed in one of the great strata of the fixed stars, and very probably not far from the place where some smaller stratum branches out from it. This supposition will satisfactorily, and with great simplicity, account for all the phenomena of the milky way; which, according to this hypothesis, is no other than the appearance of the projection of the stars contained in this stratum and its secondary branch. As a farther inducement to look on the galaxy in this point of view, let it be considered that we can no longer doubt of its whitish appearance arising from the mixed lustre of the numberless stars that compose it. Now should we suppose it to be an irregular ring of stars, in the centre nearly of which we must then suppose the sun to be placed, it will appear not a little extraordinary that the sun, being a fixed star like those which compose this imagined ring, should just be in the centre of such a multitude of celestial bodies, without any apparent reason for this singular distinction; whereas, on our supposition, every star in this stratum, not very near the termination of its length or height, will be so placed as also to have its own galaxy, with only such variations in the form and lustre of it as may arise from the particular situation of each star.'

194. A continued series of observations confirmed Dr. Herschel in these opinions; and in a succeeding paper he has given a sketch of his ideas of the interior construction of the heavens: ' That the milky way,' says he, ' is a most extensive stratum of stars of various sizes, admits no longer of the least doubt; and that our sun is one of the heavenly bodies belonging to it is as evident. I have now viewed and gauged this shining zone in almost every direction, and find it composed of shining stars, whose number, by the account of those gauges, constantly increases and decreases in proportion to its apparent brightness to the naked eye.

195. ' But, in order to develop the ideas of the universe that have been suggested by my late observations, it will be best to take the subject from a point of view at a considerable distance both of space and time. Let us then suppose numberless stars of various sizes scattered over an indefinite portion of space, in such a manner as to be almost equally distributed through the whole. The laws of attraction, which no doubt extend to the remotest regions of the fixed stars, will operate in such a manner as most probably to produce the following remarkable effects:

196. 1. It will frequently happen that a star, being considerably larger than its neighbouring ones, will attract them more than they will be attracted by others that are immediately around them; by which means they will be in time as it were condensed about a centre; or in other words, form themselves into a cluster of stars of almost a globular figure, more or less regularly so, according to the size and original distance of the surrounding stars. The perturbations of the mutual attractions must undoubtedly be very intricate, as we may easily comprehend by considering what Sir Isaac Newton has said (Princip. lib. i. prob. 38, et seq.): but in order to apply this great author's reasoning, of bodies moving in ellipses, to such as are here for a while supposed to have no other motion than what their mutual gravity has imparted to them, we must suppose the conjugate axes of these ellipses indefinitely diminished, whereby the ellipses will become straight lines.

197. 2. The next case, which will happen almost as frequently as the former, is where a few stars, though not superior in size to the rest, may chance to be rather nearer each other than the surrounding ones; for here also will be formed a prevailing attraction in the combined centre of gravity of them all, which will occasion the neighbouring stars to draw together; not, indeed, so as to form a regular globular figure, but, however, in such a manner as to be condensed towards the common centre of gravity of the whole irregular cluster. And this construction admits of the utmost variety of shapes, according to the number and situation of the stars which first gave rise to the condensation of the rest.

198. 3. From the composition and repeated conjunction of both the foregoing forms, a third may be derived, when many large stars, or combined small ones, are situated in long extended regular or crooked rows, hooks, or branches; for they will also draw the surrounding ones so as to produce figures of condensed stars coarsely similar to the former, which gave rise to these condensations.

199 4. We may likewise admit of still more extensive combinations; when, at the same time that a cluster of stars is forming in one part of space, there may be another collecting in a different, but perhaps not far distant, quarter, which may occasion a mutual approach towards their common centre of gravity.

200. 5. In the last place, as a natural consequence of the former cases, there will be great cavities or vacancies formed by the retreat of the stars towards the various centres which attract them; so that, upon the whole, there is evidently a field of the greatest variety for the mutual and combined attractions of the heavenly bodies to exert themselves in.

201. From this theoretical view of the heavens, which has been taken from a point not less distant in time than in space, we will now retreat to our own retired station, in one of the planets attending a star in its great combination with numberless others; and in order to investigate what will be the appearances from this contracted situation, let us begin with the naked eye. The stars of the first magnitude, being in all probability the nearest, will furnish us with a step to begin our scale. Setting off, therefore, with the distance of Sirius or Arcturus, for instance, as unity, we will at present suppose, that those of the second magnitude are at double, those of the third at treble, the distance, &c. Taking it for granted, then, that a star of the seventh magnitude (the smallest supposed visible with the naked eye) is about seven times as far as one of the first, it follows, that an observer who is enclosed in a globular cluster of stars, and not far from the centre, will never be able with the naked eye to see to the end of it; for since, according to the above estimations, he can only extend his view to above seven times the distance of Sirius, it cannot be expected that his eyes should reach the borders of a cluster which has perhaps not less than fifty stars in depth everywhere around him. The whole universe to him, therefore, will be comprised in a set of constellations richly ornamented with scattered stars of all sizes: or, if the united brightness of a neighbouring cluster of stars should, in a remarkably clear night, reach his sight, it will put on the appearance of a small, faint, whitish, nebulous cloud, not to be perceived without the greatest attention.

202. Let us suppose him placed in a much extended stratum, or branching cluster of millions of stars, such as may fall under the third form of nebulæ already considered. Here also the heavens will not only be richly scattered over with brilliant constellations, but a shining zone or milky way will be perceived to surround the whole sphere of the heavens, owing to the combined light of those stars which are too small, that is, too remote to be seen. Our observer's sight will be so confined, that he will imagine this single collection of stars, though he does not even perceive the 1000th part of them, to be the whole contents of the heavens.

203. Allowing him now the use of a common telescope, he begins to suspect, that all the milkiness of the bright path which surrounds the sphere may be owing to stars. He perceives a few clusters of them in various parts of the heavens, and finds also that there are kinds of nebulous patches: but still his views are not extended to reach so far as to the end of the stratum in which he is situated; so that he looks upon these patches as belonging to that system, which to him seems to comprehend every celestial object. He now increases his power of vision; and, applying himself to a close observation, finds that the milky way is indeed no other than a collection of very small stars. He perceives, that those objects which had been called nebulæ, are evidently nothing but clusters of stars. Their number increases upon him; and when he resolves one nebula into stars, he discovers ten new ones which he cannot resolve. He then forms the idea of immense strata of fixed stars, of clusters of stars, and of nebulæ; till going on with such interesting observations, he now perceives, that all these appearances must naturally arise from the confined situation in which we are placed. Confined it may justly be called, though in no less a space than what appeared before to be the whole region of the fixed stars, but which now has assumed the shape of a crookedly branching nebula; not indeed one of the least, but perhaps very far from being the most considerable, of those numberless clusters that enter into the construction of the heavens.

204. Dr. Herschel shows, that this theoretical view of the heavens is perfectly consistent with facts, and seems to be confirmed by a series of observations. 'Upon the whole,' says he, 'I believe it will be found, that the foregoing theoretical view, with all its consequential appearances, as seen by an eye enclosed in one of the nebulæ, is no other than a drawing from nature, wherein the features of the original have been closely copied: and I hope the resemblance will not be called a bad one, when it shall be considered how very limited must be the pencil of an inhabitant of so small and retired a portion of an indefinite system, in attempting the picture of so unbounded an extent.'

205. The doctor having determined that the visible system of nature, by us called the universe, consisting of all the celestial bodies, and many more than can be seen by the naked eye, is only a group of stars or suns with their planets, constituting one of those patches called a nebula, and perhaps not one 10,000th part of what is really the universe, he goes on to delineate the figure of this vast nebula, which he is of opinion may now be done; and for this purpose, he gives a table, calculating the distance of the stars which form its extreme boundaries, or the length of the visual ray in different parts, by the number of stars contained in the field of his telescope at different times. He then proceeds to offer some thoughts on the origin of the nebulous strata of the heavens; in doing which, he gives some hints concerning the antiquity of them; conjectures which, though abundantly ingenious, are of too fanciful a nature to justify us in detailing them.

206. An objection naturally occurred in the course of Herschel's observations and enquiries concerning the structure of the heavens, that if the different systems were formed by the mutual attractions of the stars, the whole would be in danger of destruction by their falling one upon another.

207. Several circumstances, however, he says, manifestly tend to a general preservation. The indefinite extent of the sidereal heavens, must produce a balance that will effectually secure all the great parts of the whole from approaching

to each other. 'There remains then (says he) only to see how the particular stars belonging to separate clusters are prevented from rushing on to their centres of attraction.' This he supposes may be done by projectile forces; 'the admission of which will prove such a barrier against the seeming destructive power of attraction, as to secure from it all the stars belonging to a cluster, if not for ever, at least for millions of ages. Besides, we ought perhaps to look upon such clusters, and the destruction of a star now and then in some thousands of ages, as the very means by which the whole is preserved and renewed. These clusters may be the laboratories of the universe, wherein the most salutary remedies for the decay of the whole are prepared.'

208. The existence of such projectile forces is rendered probable, from the apparent changes of position of certain stars; and from a comparison of the best modern observations with the most accurate of former times, there appears to have been a real change in the places of some of them. The Bull's Eye, Sirius, and Arcturus, are now found to be half a degree more southerly than the ancients reckoned them; and the bright star in the shoulder of Orion, has, in Ptolemy, almost a whole degree of latitude more southerly than at present. And, as we have already noticed, such remarkable changes have been observed both in the positions and distances of so many of the double stars, that we are constrained to admit that nothing created is stable. Appearances, indeed, indicate that our own system is in motion towards a point of the heavens whose right ascension is about 250″ and declination about 50″ north. Whether this motion is one of rotation about some distant centre, or of direct motion, must be left to time and accurate observation to determine. The consequence of this motion, however, is, certain apparent motions of several of the fixed stars, entirely unconnected with the phenomena arising either from the earth's figure, or its revolution round the sun. Dr. Maskelyne has given a table containing the proper motions, both in right ascension and declination of thirty six of the principal fixed stars. We subjoin this table as one of great importance to the practical astronomer.

209. Table of the annual proper motions of thirty-six fixed stars, in right ascension and declination:

Names of the Stars.	Annual Proper Motion.	
	In right ascension.	In declination.
	″	″
γ Pegasi . . .	— 0·09	— 0·15 N.
α Arietes . . .	+ 0·10	+ 0·07 S.
α Ceti	— 0·12	— 0·08 N.
Aldebaran . .	+ 0·03	+ 0·12 S.
Capella . . .	+ 0·21	+ 0·44 S.
Rigel . . .	— 0·03	— 0·16 N.
β Tauri . . .	+ 0·01	+ 0·10 S.
α Orion . . .	+ 0·01	— 0.13 N.
Sirius . . .	— 0·42	+ 1·04 S.
Castor . . .	— 0·15	+ 0·44 S.
Procyon . .	— 0·80	+ 0·95 S.
Pollux . . .	— 0·74	0·00
α Hydræ . . .	— 0·09	— 0·14 N.
Regulus . . .	— 0·22	— 0.08 N.
β Leoni . . .	— 0·57	+ 0·07 S.
β Virginis . . .	+ 0·74	+ 0·24 S.
Spicæ Virgini .	— 0·02	— 0·19 N.
Arcturus . .	— 0·26	+ 1·72 S.
1 } α Libræ .	— 0·11	— 0·18 N.
2 }	— 0·11	— 0·15 N.
α Cor. Borealis .	+ 0·26	+ 0·03 S.
α Serpentis . .	+ 0·11	— 0·19 N.
Antares . . .	0·00	— 0·26 N.
α Herculis . . .	0·00	— 0·23 N.
α Ophiuchi . .	+ 0·06	— 0·05 S.
α Lyræ . . .	+ 0·23	— 0·27 N.
γ }	— 0·11	— 0·16 N.
α } Aquilæ . . .	+ 0·48	— 0·54 N.
β }	— 0·03	+ 0·35 S.
1 } α Capricorni	0·00	— 0·28 N.
2 }	+ 0·05	— 0·26 N.
α Cygni . . .	— 0.08	— 0·03 N.
α Aquarii . . .	— 0·08	— 0·19 N.
Fomalhaut . .	+ 0·35	— 0·06 N.
α Pegasi . . .	— 0·06	— 0·18 N.
α Andromedæ .	+ 0·08	+ 0·06 S.

PART II.

OF THE VARIOUS SYSTEMS OF ASTRONOMY.

SECT. I.—OF THE MOST FAMOUS SYSTEMS, BY WHICH THE CELESTIAL PHENOMENA HAVE BEEN ATTEMPTED TO BE EXPLAINED.

210. To explain the motions and appearances of the heavenly bodies, various hypotheses have been formed; and every hypothesis that ever was framed, accounted for some one or other of them; but men being, in the early ages, ignorant of the laws of motion, could not be expected to discover the true system, or explain all the various phenomena of the celestial orbs.

211. In treating of the systems which have been invented in different ages, we do not mean to give an account of all the various absurdities that have been broached by individuals on this subject; but to confine ourselves to those systems which have been of considerable note, and been generally followed for a number of years. We are as ignorant of the opinions of the first astronomers, respecting the system of the universe, as we are of the astronomers themselves. Whatever opinions are handed down to us, must be of much later date than the introduction of astronomy among mankind.

212. If we may hazard a conjecture, however, we are inclined to think, that the first opinions on this subject were much more just, than those that were held afterwards for many years. Pythagoras maintained the motion of the earth, which is now universally believed, but at that time appears to have been the opinion of only a few detached individuals in Greece. As the Greeks borrowed many things from the Egyptians, and Pythagoras had travelled into Egypt

and Phœnicia, it is probable he might receive an account of this hypothesis from thence; but whether he did or not, wé have now no means of knowing, neither is it of any importance. Certain it is, however, that this opinion did not prevail in his days, nor for many ages afterwards.

213. In the second century the Pythagorean hypothesis was superseded by a system erected by the famous geographer and astronomer, Claudius Ptolemæus. This system, which commonly goes by the name of the Ptolemaic, he seems not to have originally invented, but adopted as the prevailing one of that age; and he, perhaps, made it somewhat more consistent than it was before. He supposed the earth at rest in the centre of the universe. Round the earth, and the nearest to it of all the heavenly bodies, the moon performed its monthly revolutions. Next to the moon was placed the planet Mercury; then Venus; and above that the Sun, Mars, Jupiter, and Saturn, in their proper orbits; then the sphere of the fixed stars; above these, two spheres of what he called chrystalline heavens; above these was the primum mobile, which, by turning round once in twenty-four hours, by some unaccountable means or other, carried all the rest along with it. This primum mobile was encompassed by the empyrean heaven, which was of a cubic form, and the seat of angels and blessed spirits. Besides the motions of all the heavens round the earth once in twenty-four hours, each planet was supposed to have a particular motion of its own; the moon, for instance, once in a month, performed an additional revolution, the sun in a year, &c. See Plate VII. fig. 4.

214. It is evident, that on this supposition, the complicated motions of the planets already described could never be accounted for. Had they circulated uniformly round the earth, their apparent motion ought always to have been equal and uniform, without appearing either stationary or retrograde in any part of their courses. In consequence of this objection, Ptolemy was obliged to invent a great number of circles, interfering with each other, which he called epicycles and eccentrics. These proved a ready and effectual salvo for all the defects of his system, as whenever a planet was deviating from the course it ought on his plan to have followed, it was then only moving in an epicycle or an eccentric, and would in due time fall into its proper path. As to the natural causes, by which the planets were directed to move in these epicycles and eccentrics, it is no wonder that he found himself much at a loss, and was obliged to have recourse to divine power for an explanation, or, in other words, to own that his system was unintelligible. It, however, continued to be in vogue till the beginning of the sixteenth century, when it was superseded by the Copernican, of which afterwards.

215. The only other systems worth mentioning, besides the true system, are the Tychonic, the semi-Tychonic, and the Cartesian; all of which have gained proselytes, though none of them were ever so universally received as the Ptolemaic and Copernican.

216. The Tychonic system, plate VII. fig. 7, was invented by Tycho Brahe, who supposed that the earth was at rest, and that the moon and sun revolved about it; the moon in a month, and the sun in a year; and at the same time, that the rest of the planets, Mercury, Venus, Mars, Jupiter, and Saturn, revolved round the sun; the three last also encompassing the earth. Besides these motions, he supposed them all to have a diurnal motion round the earth, as well as all the stars.

217. The semi-Tychonic system supposed the planets to revolve round the sun, while the sun and moon revolve about the earth as their centre of motion; and it supposed the earth to move about its axis from west to east in twenty-four hours. This system differs from the Tychonic only in this, that it supposes a diurnal motion in the earth, but, like the Tychonic, denies an annual one.

218. The Cartesian system, so named from its author, Des Cartes, supposes a variety of vortices or whirlpools, in which the motions of the heavenly bodies are performed, being carried round the sun in a vortex of ethereal matter, in different times, proportioned to their distances; and each planet having also a particular vortex of its own, in which the motions of its satellites are performed. From the laws of motion it will easily appear, that the irregular motions of the planets cannot be accounted for by these vortices; and besides, the supposition of an ethereal matter to perform the operations, is without any foundation, or analogy in nature.

SECT. II.—OF THE COPERNICAN, OR TRUE SYSTEM OF ASTRONOMY.

219. The Ptolemaic system had gained universal credit, when Copernicus began to entertain doubts of its truth, and to try if a more satisfactory method of accounting for the apparent motion of the celestial bodies, might not be obtained. He had recourse to every author upon the subject, but obtained no satisfaction, till he found from Cicero, that Nicetas, the Syracusan, had maintained the motion of the earth; and from Plutarch, that Pythagoras and others of the ancients had been of the same opinion.

220. From these small hints, this great genius deduced a most complete system of astronomy, capable of solving every phenomenon in a satisfactory manner:—a system which has been more and more confirmed by the discoveries and improvements that have been made in astronomy and mathematics, since his time; as well as by the use of telescopes, which have discovered numerous celestial phenomena formerly quite unknown. Like all important discoveries, however, when they run counter to general prejudices, the Copernican system was at first much opposed; and by none more than the celebrated Tycho Brahe, who could never assent to the motion of the earth, and who invented the system described in the last section, with a view to supersede the necessity of it.

221. But while philosophers were divided between the Ptolemaic, the Tychonic, the Cartesian, and Copernican systems, Sir Isaac Newton laid down the laws of nature and motion, and,

comparing all the phenomena in the heavens, discovered the true system of the universe, confirmed the Copernican system of astronomy, and demonstrated its truth by unanswerable arguments, drawn from the most obvious laws of nature. This system, which is founded on a basis not to be shaken, is as follows:

222. The sun, which to us is the fountain of light and heat, is an immense spherical body, which revolves on its own axis in about twenty-five days; and is the centre round which eleven other bodies, called planets, are known to revolve at different distances and in different periods. The planes in which the planets revolve all pass through the centre of the sun, and they are in general inclined to each other in very small angles. They are called primary planets, and some of them are attended by smaller ones, called satellites, which revolve round them in the same manner as they revolve round the sun. See plate III.

223. The sun and the planets are called the solar system. The orbits of the planets are not strictly circular, but elliptical or oval, and the sun is situated in a focus of the ellipse; so that the planets, at one period of their revolution, are nearer to the sun than at another.

224. Besides the periodical revolution round the sun, each of the planets has a uniform rotatory motion round an imaginary line, called the axis, passing through the centre; and, during the whole of any planet's revolution, its axis of rotation preserves the same parallel position. In consequence of this rotation, the different parts of the surfaces of the planets are presented to the sun in succession; but it has not been observed, that the axis round which any planet rotates, is perpendicular to the plane in which it revolves round the sun; therefore, at one period of the revolution, one extremity of the axis and the adjacent parts of the surface will be inclined towards the sun, and the other at the opposite period.

225. There is a class of bodies called comets, which also revolve round the sun, and appear to be governed in their motion by the same laws that regulate the motions of the planets. Their orbits are greatly elongated, and they come towards the sun from all quarters of the heavens, differing in this respect from the planets, which revolve pretty nearly in the sun's plane. They are further distinguished from the other stars, by a luminous stream of light which they emit when they come near the sun.

226. The earth, on which we live, is one of the planets; it revolves round the sun in a year, and performs its rotation on its axis, from west to east, once in a day. The moon is a satellite attending the earth, round which it revolves from west to east in about twenty-seven days eight hours.

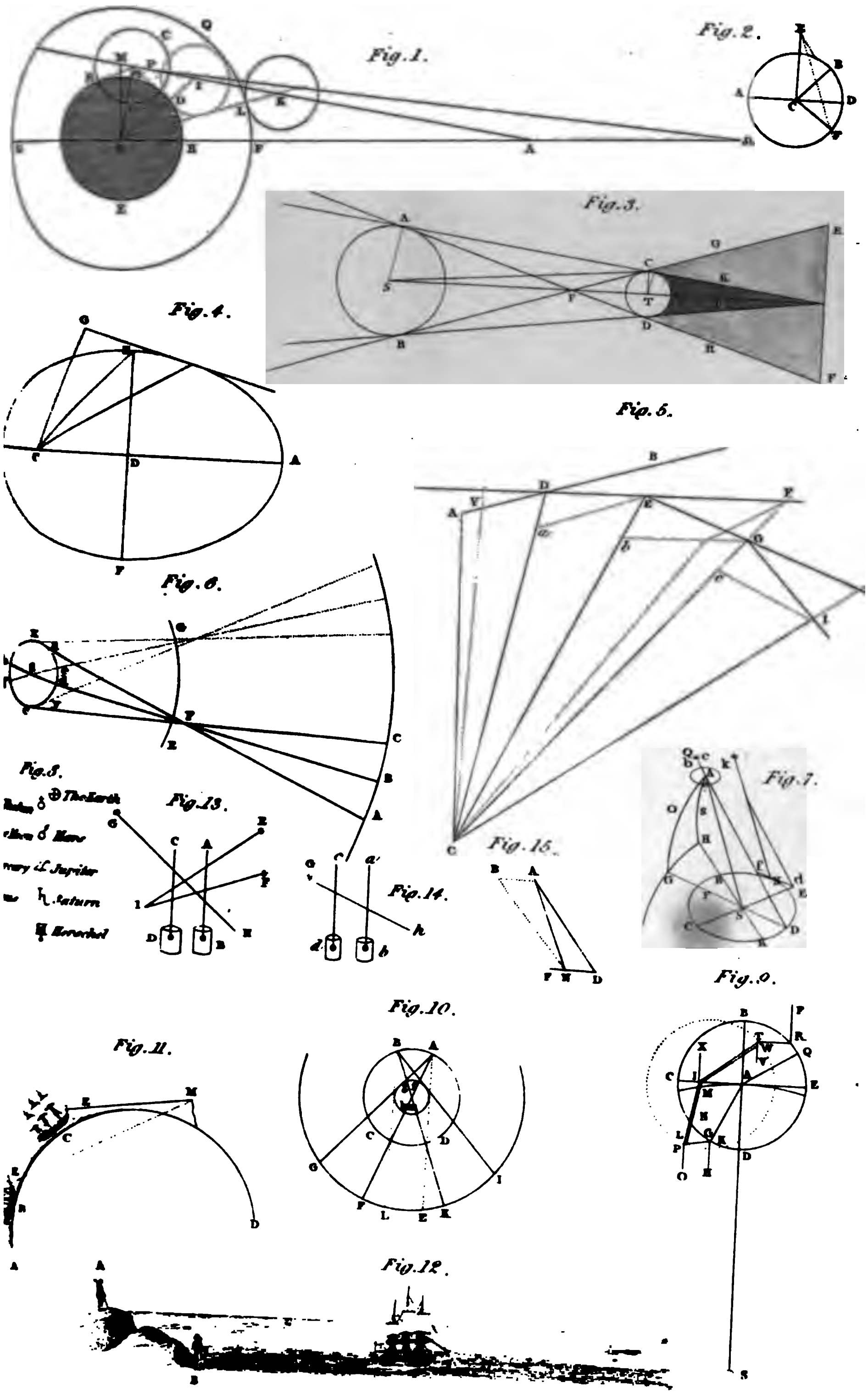
227. The planets, in the order of their distance from the sun, are: Mercury, Venus, the Earth, Mars, Vesta, Juno, Ceres, Pallas, Jupiter, Saturn, and Herschel, Uranus, or the Georgium Sidus. Mercury, and Venus, which are nearer the sun than the earth, are called inferior planets; and those which are more distant are called superior planets, as Jupiter, Saturn, and Herschel. These latter, indeed, are also by far the largest. Venus, Juno, Ceres, and Pallas, which are all nearly at
the same distance from the sun, and all lately di
covered, are so small that they are generally calle
asteroids. Jupiter has four satellites; Saturn seve
and Herschel six: Saturn is besides surrounde
with a thin, broad, and beautiful ring, perfect
detached from his body. When an inferi
planet is between the earth and the sun, its da
side being turned towards the earth, it cannot
course be seen by us, except as a spot apparen
passing over the surface of the sun; but it c
only be so seen when it passes the sun in c
of those points in which its orbit enters into
plane of the earth's orbit. These points
called the nodes of the planet's orbit. For
characteristic marks of the sun and planets,
plate VIII. fig. 8.

228. The fixed stars are at an immense d
tance; for it has not yet been determined,
the nicest observations, that they have any ann
sensible parallax; that is, they appear to
earth, when on different sides of its orbit, to
exactly in the same places, the earth's orbit se
from a fixed star, appearing only as a point. Co
sequently, the fixed stars all shine with th
own native light: for it would be impossible
light, transmitted from the sun, ever to rend
them visible, as it would be infinitely weak at
immense a distance.

229. The distance of the sun is immensely gre
in comparison with that of the moon, althou
it is almost nothing with respect to that of
fixed stars. For the sun's diurnal parallax, that
the apparent semidiameter of the earth se
from the sun, is so small, that no instrumen
could be so exactly made as to find it. Henc
it is inferred, that the sun's magnitude is vast
greater than the earth's. For, supposing t
sun's parallax to amount to as much as a minut
then, since the apparent diameter of the sun
half a degree, this would make the sun's di
meter fifteen times as big as the earth's; but t
sun's parallax has been found not to exce
8·7", which will make the sun's diameter 1
times as great as the earth's. That the sun is
a globular form, is plain from the apparent m
tion of the spots upon its surface; for while t
sun moves uniformly about its axis, the spots
the middle of the disk move very quick
and near the edges more slowly, agreeably to t
motion of a globe about its axis. By observ
tions on these spots, the sun is found to revol
about its axis in twenty-five or twenty-six days

230. None of the celestial bodies in our pl
netary system shine with their own native lig
except the sun; so that all the planets, bo
primary and secondary, are opaque bodies, th
have no other light but what they receive fro
the sun, and reflect it back towards the earth a
other planets. This is evident from the moo
for only that side of her is observed to shi
which is directly opposed to the sun; but t
other side, which is from the sun, is quite dar
except so far as it is illuminated by the reflect
from the earth; for the more of the illuminat
side that is turned towards the earth, the mo
we see her enlightened, the rest being dark; a
the more of her dark side that is turned towar
the earth, the more of her appears dark. Thu
at the full, she appears all enlightened, an
her change, all dark.

ASTRONOMY.

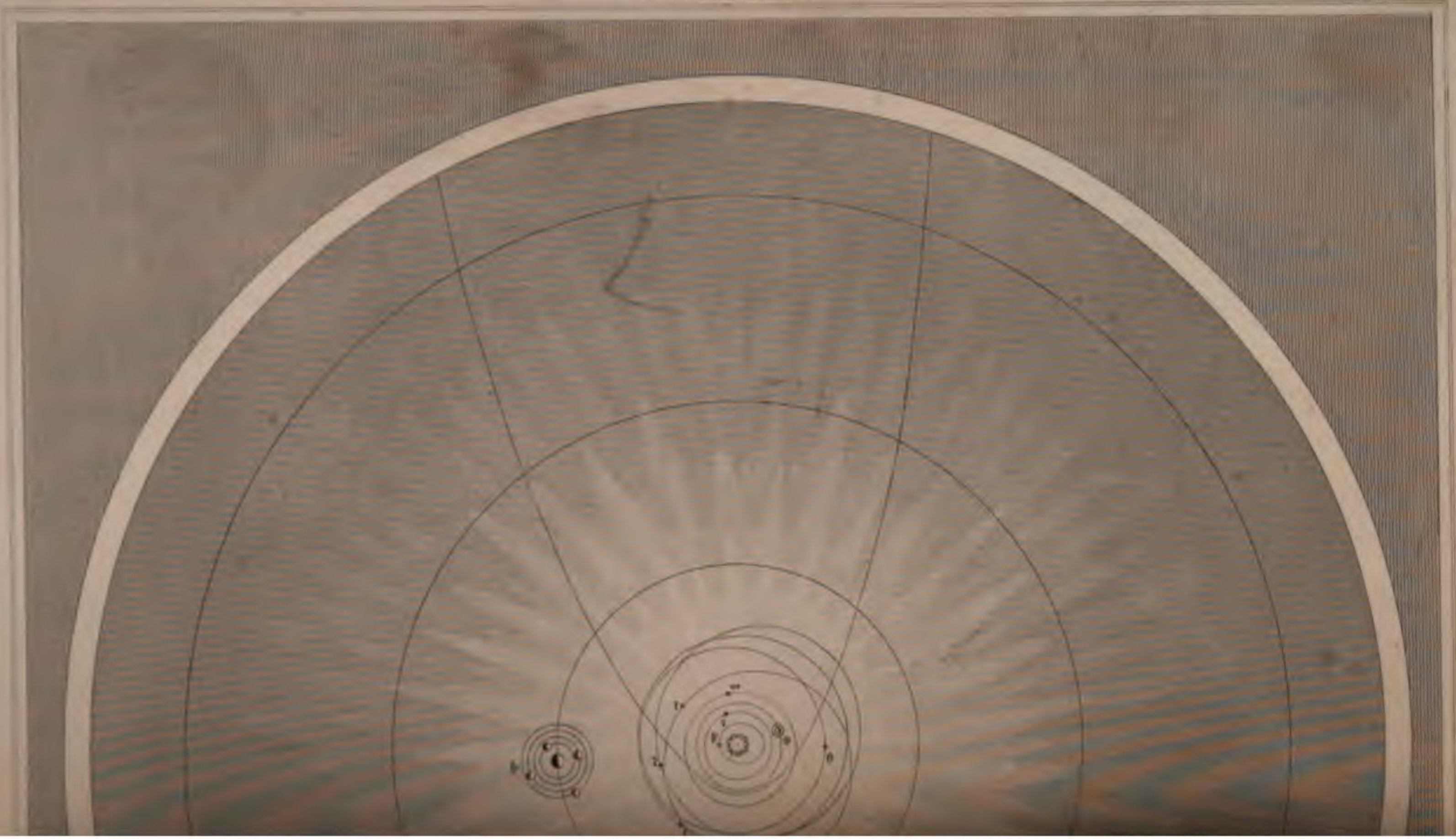


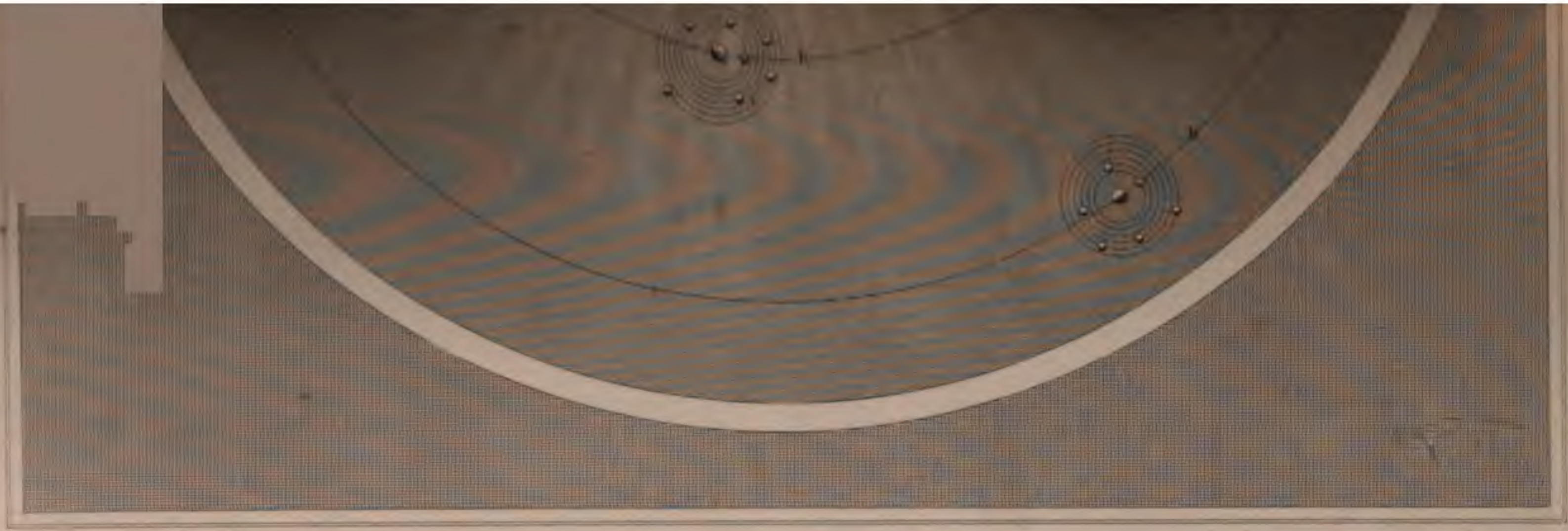
London. Published by Thomas Tegg, 73, Cheapside.

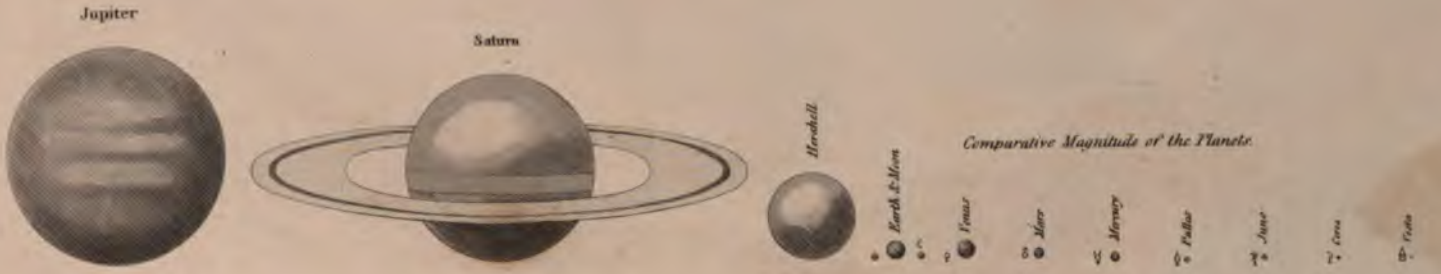
J. Shury sculp.

ASTRONOMY.

COPERNICAN SYSTEM.







Comparative Magnitude of the Planets.

London Published by Thomas Tegg 73. Cheapside.

J. Shury

.. Mercury and Venus exhibit similar phe-
na, and show all the phases of the moon
ling to their various situations. Mars
se appears gibbous when near the quadra-
with the sun. The satellites of Jupiter
clipsed when they are behind his body,
then immersed in his shadow; they like-
ast their shadows upon the body of Jupiter.

In Saturn, the shadow of the ring upon his body, proves its opacity. And the weakness of the light of those that are far distant from the sun, shows that it is not innate but borrowed.

232. The following tables contain a synopsis of the periods, distances, &c. of the sun and planets, according to the latest and best observations:

233. TABLE I.

	Periodical revolutions round the sun. D. H. M.	Proportional mean distances from the sun.	Mean distances from the semi-diameters of the earth.	Mean distances from the sun in English miles.	Eccentricities in parts of the mean distances.
CURY . .	87 23 15½	·3871	9,210	37,000,000	1/5
US . . .	224 16 49½	·72333	17,210	68,000,000	1/138
Earth .	365 6 9½	1·	23,799	95,000,000	1/60
S . . .	686 23 30¾	1·52369	36,262	144,000,000	1/11
A . . .	1848 — —	23·5513	56,049	222,000,000	1/38
) . . .	2007½ — —	26·6400	63,400	290,000,000	1/4
LAS . .	1682 — —	27·6700	65,804	265,000,000	1/4
ES . . .	1681 — —	27·6500	65,851	260,000,000	1/13
TER . .	4332 8 51½	5·20098	123,778	490,000,000	1/20
RN . .	10,761 14 36¾	9·53937	227,028	900,000,000	1/18
SCHEL . .	30,445 18 —	19·03421	453,000	1800,000,000	1/21

234. TABLE II.

	Greatest apparent diameter as seen from the earth.	Diameter in English miles.	Diurnal rotations upon their axes. D. H. M. S.	Inclinations of their orbits to the ecliptic.	Place of the ascending node.
Sun . . .	32' 36"	883,217	25 15 16 0		
RY . . .	11	3222	unknown.	7° 0'	1 S 15° 46¾'
s	58	7687	0 23 22 0	3 23½	2 14 44
Earth . .	———	7964	0 23 56 4	———	———
. . . . .	25	4189	0 24 39 22	1 51	1 17 59
A	Very small,	Estimated	uncertain.	7 8	3 13 18
. . . .	perhaps	from eighty	———	13 4	5 21 4
AS . . .	about	to 4000	———	34 38	5 22 31
. . . . .	1"	miles.	———	10 38	2 21 7
ER . . .	46	89,170	0 9 56 0	1 19½	3 8 50
RN . . .	20	79,042	0 10 16 0	2 30¼	3 21 48½
CHEL . .	4	35,109	unknown.	0 48	3 13 1

235. TABLE III.

	Greatest elongation of inferior, and parallax of superior planets.	Proportion of light and heat.	Bulk in respect to the earth.	Proportion of density.	Place of the aphelion.
Sun . . .			1,380,000	1/4	
URY . . .	28° 20'	6·68	1/15	2	8 S 14° 13'
. . . . .	47 48	1·91	9/10	1¼	10 9 38
Earth . .	———	1	1	1	9 9 15¼
. . . . .	47 24	·43	7/30	73/100	5 2 6¼
A	———	·18	uncertain,	unknown.	2 9 42
)	———	·16	but ex-	———	7 22 49
AS . . .	———	·13	ceedingly	———	10 4 36
ES	—	·13	small.	———	10 26 9
TER . . .	. 51	·037	1400	23/100	6 10 57½
RN . . .	29	·011	1000	1/10	9 0 45½
SCHEL . . .	4½	·00276	96	22/100	11 23 23

Sect. III. On Central Forces.

236. As the doctrine of central forces is of the greatest importance in the science of astronomy, it will be proper to explain here some of the most material propositions relative to that subject.

237. In this doctrine it is supposed, that matter is equally indifferent to motion and rest; or that a body at rest never moves itself, and that a body in motion never changes either the velocity or direction of its motion, but would move uniformly forward in a straight line for ever, unless some external force or resistance should stop or change it.

238. Hence when a body at rest has a tendency to move, or when a body moving in a straight line, has its velocity continually increased or diminished, or when the direction of a motion is continually changed, and thereby a curve line described; it is supposed that these circumstances proceed from the influence of some power that acts incessantly, which power may be measured in the first case by the pressure of the quiescent body against the obstacle that hinders it from moving; or by the change made on the velocity in the second case; or by the flexure of the curve described in the third case; due regard being had to the time in which these effects are produced, and other circumstances, according to the principles of mechanics. Now the power or force of gravity produces effects of each of these kinds, which fall under our observation at the surface of the earth; for the same power that renders bodies heavy while at rest, accelerates their motion when they descend perpendicularly, and bends the path of their motion into a curve line when they are projected in a direction oblique to that of their gravity. But we can judge of the forces or powers that act on the celestial bodies by effects of the last kind only, and hence it is that the doctrine of central force is of so much use in the theory of the planetary motions.

239. The following proposition is the foundation of this doctrine, and is given by Sir I. Newton in his Principia. The areas which revolving bodies describe by radii drawn to an immovable centre of force, lie in the same planes and are proportional to the times in which they are described. Let the time supposed be divided into equal parts, and in the first part let a body be supposed, by its own inert force, to describe a right line, AD, Plate VIII. fig. 5. From what we have premised it will appear, that in the second part of time the body would describe the line D B equal to A D, if nothing acted upon it. But when the body is come to D, suppose a centripetal force tending to the point C acts upon it by a single impulse, such, that it would have carried the body from D to *a* in the same time. The body being now acted upon by two powers, one in the direction D B, and another in the direction D *a* passing through the centre of force, if the parallelogram *a* D B E be completed, the body will move in the diagonal D E, and at the end of the time will be found at E, by the principles of mechanics. Join A C, C E: the triangle A D E, D C B, having equal bases, will therefore be equal, and the triangles C D B, C D E, are equal, for they stand on the same base C D, and lie between the parallels D C, B E; therefore the triangles A C D, D C E are equal. By the same method of reasoning, if in the third particle of time the body describes any other right line E G, it may be proved that the triangle C D E is equal to C E G; and in a fourth particle there will be described a triangle C G I equal to C E G, and so on: it is also obvious that the lines A D, D E, E G, G I, &c. lie in the same plane.

240. Thus it appears that in equal times the areas described by radii drawn to the centre of force will be equally increased, and therefore by composition, any sums of the areas are to one another, as the times in which they are described. Let the number of triangles be supposed to be now augmented, and their breadth diminished *ad infinitum*, the lines A D, D E, E G, G I, &c. will now become a curve line lying in the same plane, and the centripetal force which was supposed to act by starts, will now act continually, deflecting the body from the tangent, and thus causing it to move in a curve.

241. We may hence infer, that the velocity of a body attracted towards an immovable centre, in spaces void of resistance, is reciprocally as a perpendicular let fall from that centre on the right line that touches the orbit. For draw C Y perpendicular to D E, and suppose the body to describe D E in a given time, hence the velocity of the body will be proportional to D E, and from what has been said, the area of the triangle C E D will be given, for it is proportional to the time: but when the area of a triangle remains the same, the base varies inversely as the perpendicular, therefore D E, or the velocity of the body, is inversely as C Y the perpendicular; and the same will hold true, whether the body, by successive impulses, moves by a polygon in the way here described; or, by the continual action of the central force, moves in a curve line.

242. The central force of a body moving in the circumference of a circle, is as the versed sine, A M (plate X. fig. 7), of the indefinitely small arc A E; or it is as the square of that arc divided by the diameter A B. For A M is the space through which the body is drawn from the tangent in the given time, whence 2 A M is the measure of the intensity of the force. But A E being very small, and therefore nearly equal to its chord, we have $AM = \frac{AE^2}{AB}$. If therefore two bodies revolve uniformly in different circles, their central forces are directly as the squares of their velocities, and inversely as the diameters, or as the radii of the circles. For the velocities are as the space uniformly described in the same time. Hence, $F : f :: \frac{V^2}{D} : \frac{v^2}{d}$. Hence, if the diameters are inversely as the squares of the velocities, the forces will be as the fourth power of the velocities.

244. The central forces are to each other as the diameters divided by the squares of the periodic times. For if C be the circumference described in the time *t*, with the velocity *v*, then $C = t\,v$, or $v = \frac{C}{t}$. Hence, $F : f :: \frac{V^2}{D} : \frac{v^2}{d} :: \frac{C^2}{DT^2} : \frac{c^2}{d\,t^2} :: \frac{D}{T^2} : \frac{d}{t^2}$; for the diameter varies as the circumference.

Fig. 1.

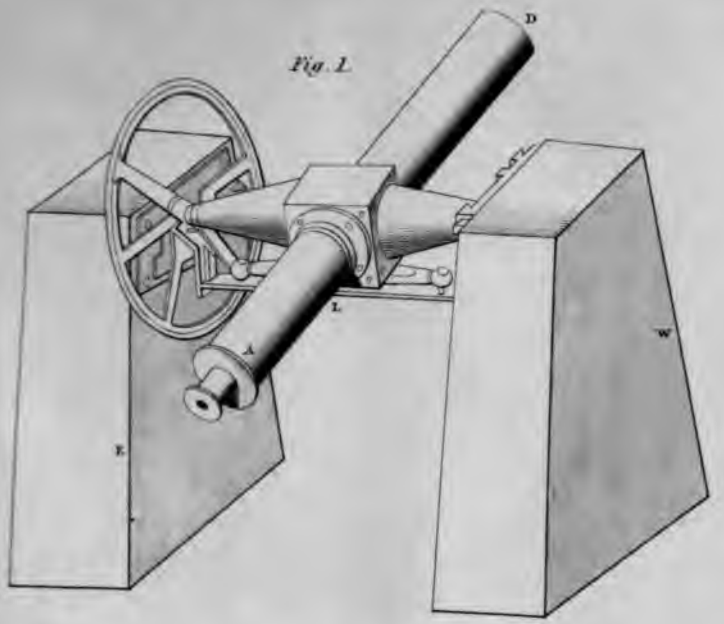
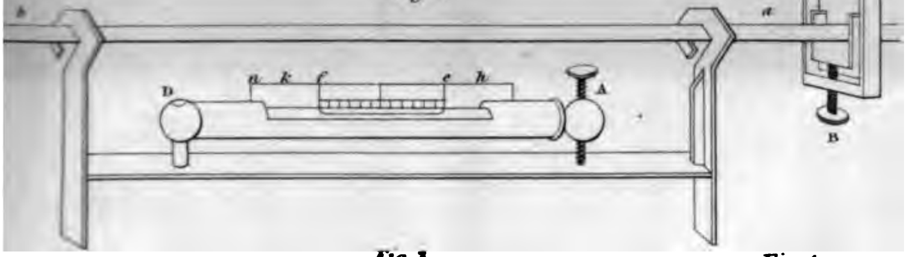


Fig. 2.



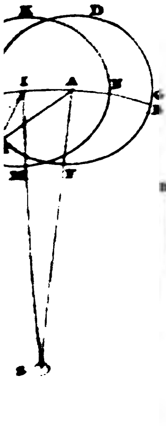


Fig. 3.

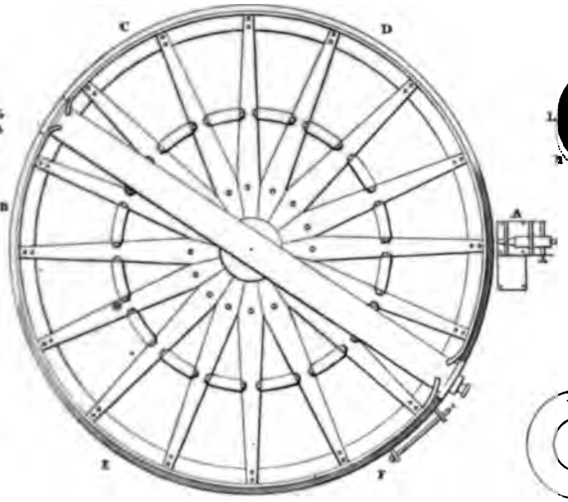


Fig. 4.

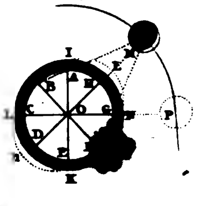
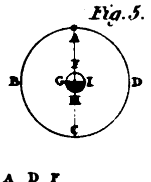


Fig. 5.



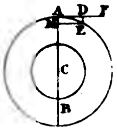


Fig. 7.

London. Published by Thomas Tegg. 73. Cheapside.

J. Shury Sculp.

f two bodies, revolving in different e acted upon by the same central force, odic times are as the square roots of eters, or of the radii of those circles. n $F = f$, the expression $F : f ::$;ives $\frac{D}{T^2} = \frac{d}{t^2}$ whence $T : t :: \sqrt{D}$

f the velocities be inversely as the disom the centre, the forces will be in- ; the cubes of the same distances, or s the cubes of the velocities. For $F :$ $: \frac{v^2}{d}$; whence, if D vary as V, inversely, $V^3 : v^3$; or $F : f :: d^3 : D^3$.

the velocities be inversely as the square he radii, the squares of the times will cubes of the radii. For, as has been ove, $F : f :: \frac{V^2}{R} : \frac{v^2}{r}$; and $F : f ::$ vhence $\frac{V^2}{R} : \frac{v^2}{r} :: \frac{R}{T^2} : \frac{r}{t^2}$. And if $V^2 :$ R, this proportion becomes $\frac{r}{R} : \frac{R}{r} ::$ When $\frac{r^2}{Rt^2} = \frac{R^2}{rT^2}$, or, $\frac{r^3}{t^2} = \frac{R^3}{T^2}$, or $: R^3 : r^3$. Hence, also, if the forces ely as the squares of the radii, the of the periodic times will be as the the distances. For $F : f :: \frac{R}{T^2} : \frac{r}{t^2}$, $: R^2 :: \frac{R}{T^2} : \frac{r}{t^2}$, or $T^2 : t^2 :: R^3 : r^3$.

We shall now apply the doctrine of cens, to the circumstances of a planet ren an ellipsis, by a force directed towards

et A B H L (plate VI. fig. 2) represent the S and A the foci, and let P be the place anet, and PT a tangent at P, and let n indefinitely small arc described by t. Join PS, $p\,s$, and draw pF parallel eeting PT in F. Then pF is the central the arc pP. Let $a =$ the parameter of verse AH; or let $a\text{AC} = 2\,\text{BC}^2$. From I parallel to PT, meeting PK in I, and Then the triangles PIi, PCE being ind Pi equal and parallel to pF. Pi PI :: PE, or (by conics) AC : PC. pP : $a \cdot$ PI :: AC : PC. And simi- PI :: PI · IK :: a : KI; and by the of the ellipse IP · IK : Ip^2 :: PC^2 : rom p draw pM perpendicular to SP, he similar right angled triangles $p\,i$M e have ip, or Ip (for they differ by s indefinitely small) pM :: PE : PD. onics PE : PD :: CN : CB, whence I :: CN : CB, and consequently Ip^2 : CN^2 : CB^2. Hence, by comparing portions, we have pF · a IP · IP · KI IP · a · IP · KI · Ip^2 · pM^2 :: CA · a. N^2 : PC · KI · CN^2 · CB^2; or by reduc- F : pM^2 : a · AC · PC : KI · CB^2; or, pM^2 : 2 CB^2 · PC : CB^2 · KI :: PC : it P and I being indefinitely near, KI $=$ KP $=$ 2 PC; therefore $a \cdot p\text{F} = p\text{M}^2$. Now the time in P$p$ is represented by the area of the triangle SPp or by $\frac{\text{SP} \cdot p\text{M}}{2}$, whence $\text{T}^2 = \frac{\text{SP}^2 \cdot p\text{M}^2}{4}$, and consequently $p\,\text{M}^2 = \frac{4\,\text{T}^2}{\text{SP}^2}$ whence pF (the force) $= \frac{4\,\text{T}^2}{a \cdot \text{SP}^2}$, or (as the increments of time are uniform), the force is inversely as the square of the distance from the focus.

250. We may hence infer, that if several planets revolve in different ellipses about a common focus, that the areas of the sectors described in the same time are as the square roots of the parameter of the transverse axes. For by conics $a . p\,\text{F} = p\,\text{M}^2$; but p F varies as $\frac{1}{\text{SP}^2}$; hence $a = \overline{p\text{M}.\text{SP}^2}$, or $\sqrt{a} = \text{PM}.\,\text{SP}$. But PM. SP is proportionate to the area of elementary sector S Pp, which therefore varies as $t\sqrt{a}$.

251. We may farther infer, that the velocities in the different ellipses, are as the square root of the parameter of the transverse, divided by the perpendicular from the focus on the tangents, passing through the places of the planets. For the velocity, in an indefinitely small space of time, is as the arc pP; and from the similar triangles S PT, p MP, an hour S T : S P :: P M : pP. Whence $p\,\text{P} = \frac{\text{SP}.\,p\text{M}}{\text{ST}} = \frac{\sqrt{a}}{\text{ST}}$

252. It is farther apparent from what has been done, that the areas of the different ellipses are to each other as the product of the times by the square roots of the parameters of the transverse axes. For the area, Q, is as the product of the sector S Pp by the time, t, and the sector varies as $\sqrt{a}$; therefore Q varies as $t\sqrt{a}$.

253. Again, the squares of the periodic times are proportional to the cubes of the transverse axes. For let b be the less, d the greater axis, and a the parameter; then by conics $a\,d = b^2$, or $a\,d^3 = b^2\,d^2$. But the whole areas are as the product of the axes; and also, as has been just shown, as $t\sqrt{a}$. Hence $b^2\,d^2$, or $d^3\,a = t^2\,a$, or d^3 varies as t^2.

SECT. IV. OF THE ORBITS AND MOTIONS OF THE PRIMARY PLANETS.

254. For the theorems in the preceding section on the subject of central forces we are indebted to the sagacity of Newton. They had before his time, however, been found by Kepler to be true in the case of the known planets of the solar system. Kepler showed that these laws *did* obtain in the system; Newton shewed that they *must* obtain.—The three fundamental laws of planetary motion which Kepler discovered, and of which the demonstrations given above, are these.

255. 1. The primary planets and comets describe round the sun, and the secondary planets describe round their respective primary planets, areas proportioned to the times.

256. 2. The orbits described round the sun, and round the primary planets, are ellipses, having the sun of the primary planet in the focus.

257. 3. The squares of the periodic times of planets revolving round common centres, are proportional to the cubes of their mean distances.

258. These laws are universal; they are obeyed by all the planets of our system, which revolve nearly in the same plane, and they are found to obtain also in the comets which move round the sun in all directions.

259. In addition to what has been said, the following popular illustration may be given of the peculiarities of the motion of a planet in the different planets of its orbit. Let A B and E F be the axis of an ellipse, of which D is the centre, and C the focus. See plate VIII.fig. 4. Suppose that P is the place of a planet moving in the curve A F B E, (supply P in the fig.) and that P G is drawn touching the curve at P. Join C P, C E, and draw C G perpendicular to P G. The place of the sun will be at C the focus, and the planet will move in the curve; so that the line C P shall pass over equal areas in equal times. Since the velocity of the planet is inversely as the perpendicular upon the tangent, and the lines C B, C A, are perpendicular to tangents at the points B and A, the velocity at A, as C A to C B, and the velocity at B is to the velocity at P as C G to C B. Thus at B, which is called the perihelion, the velocity will be the greatest, and at A, the aphelion, it will be the least; and at any other point, P, it will be between these two extremes. The line C E is equal to B D, which is a mean between B C and C A; and when the planet is at E, it is said to be at its mean distance. The force, that, acting upon the planet at P, bends it from the tangent, is to the force that acts upon it at E, any other point, as the square of C E to the square of C P.

260. We have hitherto supposed the sun to remain absolutely at rest, and that the planet was urged towards it, as to an immovable point; but the tendency of the planets towards the sun, arises from a law, that not only connects the planets with the sun, but with each individual particle of matter in the solar system; a particular cause of this law or fact, is the gravity of bodies at the surface of our earth, and the general law that includes all particular cases, has been termed gravitation. Hence it follows, that not only the planets gravitate towards the sun, but the sun gravitates towards the planets; so that, in strict truth, both the sun and each planet revolve round a point, which is their common centre of gravity, and which is as much nearer to the sun than to the planet, as the sun contains more matter than the planet.

261. The truth of this general law is only to be proved by a careful examination of particular cases; and, supposing it to be true, the effects it ought to produce in the planetary motions round the sun, are in perfect coincidence with the best observations.

262. If all matter gravitates to, or is attracted by, all other matter, it is evident that the planets must also gravitate towards each other; and thus in some measure the uniformity of their motions round the sun will be affected. Now, by the most accurate observations, this is really found to be the case; and the effects pro are precisely what they ought to be, sup that the same law, which regulates the ten of the planets towards the sun, also re their tendency to one another.

263. If the planets were acted on by a directed to the centre of the sun only, v according to the general law of gravity, an centre were quiescent, their motions ab would be perfectly regular; but since the acted on by a power directed to every b the system, in order to judge of the eff these actions, Newton first supposes two b revolving about their common centre of gr and gravitating towards each other, and sin direction of this mutual gravitation passes a through that centre, and their distances f vary always in the same proportion as the tances from each other, they must de similar figures about that point and abou other, and describe equal areas in equal about that centre, and about each other; s there will be no irregularities in the mot two bodies about each other, because of mutual attractions, whatever the law of gravity is supposed to be; only they will re in less time about their centre of gravity, the one would have done about the other q cent, because the orbit described about other centre of gravity is less than that wh described by any one of them about the quiescent; their distance in both cases being same, and the orbits similar.

264. If three or more bodies mutually at each other, the gravitation of any one of t arising from the attractions of the rest, ma determined by the rule for composition of mo and if the law of gravity be such as obtai the solar system, its gravitations will no always directed to the centre of gravity o other bodies, or indeed to any fixed point, sometimes to one side of that centre and s times to the other, and therefore equal will not be described in equal times a any point in the system; and some irr larities will therefore arise in the motions o bodies.

265. But if one of these bodies should vastly greater than the others, so that the act of the other bodies may be neglected, w compared with its action; and the centr gravity of the system be always found nea the irregularities of such a system will be small, the areas described in equal times ab the centre of the great body will be ne equal, and the orbits described will be ne elliptic, having that centre in their focus.

266. We have seen that the determinatio the circumstances relative to two bodies motion, is a matter of great simplicity; when the number of bodies is increased by one, the general estimation of their eff on each other's motions is a problem that hitherto baffled the skill of the most emi philosophers. It happens very fortunately in the only case in which it is of much portance to us, it admits of an approxi solution, from the sun being so much gre than all the other planets; for in the case of

moon, the sun, and the earth, which we may take for the sake of illustration, the sun disturbs the motions of the moon as seen from the earth, only by the difference of its attractions on the moon and the earth, which difference, when compared with the former by which the moon is attracted towards the earth, is always very small.

267. The action of Jupiter on Saturn, when greatest (that is, when their distance is least), is found by calculation to be $\frac{1}{211}$ of the action of the sun upon Saturn. This produces an effect which is decidedly perceptible.

268. The whole action of Jupiter disturbs the motion of Saturn in their conjunction, because Jupiter then acts upon Saturn and upon the sun in opposite directions. But because Saturn then acts upon Jupiter and upon the sun in the same direction, if it acted also with the same force on both, it would have no effect on the motion of Jupiter about the sun; and it is by the excess of its action on Jupiter, above its action on the sun, that it disturbs the motion of Jupiter. This excess is found to be one 1913th part of the action of the sun on Jupiter; and therefore is much less than the force with which Jupiter disturbs the motion of Saturn.

269. The actions of the other planets on each other are incomparably less than these, and the irregularities proceeding from those actions are always less in any planet, as it is nearer the sun; but the orbit of the earth is a little more irregular than that of its neighbouring planets, from the great comparative size of its moon, round the common centre of gravity of which, and the earth, both the earth and the moon make a monthly revolution.

Sect. V.—Of the Orbits and Motions of the Secondary Planets.

270. The same general principle of gravitation which contains the primary planets in their orbits, extends also to the motions of the secondary planets, both in regard to their motion round the sun along with their primaries, and in their motions round their primaries as a centre; which furnishes us with an additional proof of this general law, that all matter gravitates to all other matter with a force reciprocally proportional to the square of the distance.

271. That each secondary planet is kept in its orbit by a power directed towards its primary, &c. is proved from the phenomena of the satellites of Jupiter and Saturn; because they move in circles, as far as we can observe, about their respective primaries with an equal course, the primary being the centre of each orbit: and by comparing the times in which the different satellites of the same primary perform their periods, they are found to observe the same relation to the distances from their primary, as the primary planets observe in respect of their mean distances from the sun. The same thing holds good also with respect to the earth and moon; for she is found to move round the earth in an ellipsis after the same manner as the primary planets do about the sun, excepting only some small irregularities in her motions, the cause of which will be particularly explained in what follows; and it will appear that they are no objections against the earth's acting on the moon in the same manner as the sun acts on the primary planets; that is, as Jupiter and Saturn act upon their satellites.

272. The power of Jupiter and Saturn may be measured to a very considerable distance, by the number of satellites which move round them; for the distance of the outermost satellite of each of them exceeds several times that of the innermost. That the force which retains the moon in her orbit, bears precisely that relation which accords with its distance to the known force of gravity on the surface of the earth, may be shown by the following very simple process.

273. Let A in plate VII. fig. 5, represent the earth, B the moon, B C D the moon's orbit; which differs little from a circle of which A is the centre. If the moon in B were left to itself to move with the velocity it has in the point B, it would leave the orbit and proceed straight forward in the line B E which touches the orbit in B. Suppose the moon would upon this condition move from B to E in the space of one minute of time: by the action of the earth upon the moon, whereby it is retained in its orbit, the moon will really be found at the end of this minute in the point F, from whence a straight line drawn to A will make the space B F A in the circle equal to the triangular space B E A; so that the moon, in the time wherein it would have moved from B to E, if left to itself, has been impelled towards the earth from E to F. And when the time of the moon's passing from B to F is small, as here it is only one minute, the distance between E and F scarcely differs from the space through which the moon would descend in the same time, if it were to fall directly down from B towards A, without any other motion. A B, the distance of the moon from the earth, is about sixty of the semi-diameters of the latter; and the moon completes her revolution round the earth in about twenty-seven days, seven hours and forty-three minutes: therefore the space E F will here be found by computation to be about 16⅛ feet. Consequently, if the power by which the moon is retained in its orbit, be greater, near the surface of the earth, than at the distance of the moon, in the duplicate proportion of that distance, the number of feet a body would descend near the surface of the earth, by the action of this power upon it, in one minute, would be equal to the number 16⅛ multiplied twice into the number sixty, that is, to 58,050.

274. Now bodies falling near the surface of the earth have been found, by exact experiments, to descend 16⅛ feet in one second; and the spaces described by falling bodies being as the squares of the times of their fall, the number of feet a body would describe in its fall near the surface of the earth in one minute of time, would be equal to 16⅛ multiplied by 60^2; the same as the power which acts upon the moon would cause.

275. We may hence conclude, that the power which retains the moon in her orbit is the same as that which causes bodies near the surface of the earth to gravitate; for, since the power by which the earth acts on the moon will cause

because the plane of this ellipsis is not the same with that of the earth's orbit, it follows, that the former will continually change; so that neither the inclination of the two planes towards each other, nor the line in which they intersect, will remain for any length of time unaltered.

285. The various forces by which the motion of the moon is disturbed, and the changes which take place in its orbit, may be investigated in the following manner. See plate IX. fig. 13. Let C A B D be the moon's orbit, T the earth, S the sun, P the moon; make SK = ST; and let SK : S L : : S P² : S K². Then if SK or ST represent the sun's force at T, SL will represent his force at P. Draw L M parallel to PT; divide the force LS into the two forces LM acting parallel to PT, and MS acting parallel to TS. But the force LM, and the part TM disturb the moon's motion.—The force L M in its mean quantity is equal to PT, and by so much the force of the earth is increased. Also TM in its mean quantity is equal to 3PK, acting in a direction PN parallel and equal to T S; and the force M T draws the moon out of her orbit. Let P p be the periodical times of the earth and moon; then the sun's centripetal force at T (S T) : the earth's centripetal force at P $: : \frac{\text{ST}}{\text{PP}} : \frac{\text{PT}}{pp}$; therefore the earth's centripetal force at P $= \frac{\text{PT} \times \text{PP}}{pp}$. And this is to the additional force PT $: : \frac{\text{PT} \times \text{PP}}{pp} : \text{PT} : : \text{PP} : pp$. That is, the force by which the moon is retained in her orbit : is to the increase of centripetal force by the sun's action : : PP : pp : : 178·725 : 1.—Therefore the increase of the moon's centripetal force is $\frac{1}{178{\cdot}725}$ of that force.

286. Also force PT : force 3PK or PL : : PT : 3 P K. Therefore, ex æquo, the force by which the moon is retained in her orbit : disturbing force PL or TM : : PT × 178·725 : 3 PK. Therefore the disturbing force TM $= \frac{3\text{PK}}{\text{PT} \times 178{\cdot}725} \times$ earth's centripetal force on the moon = $3a$ the sine of the moon's distance from the quadratures × earth's centripetal force, divided by 178·725 × radius.

Let C, c, be the centripetal forces of the sun and earth, s = sine of the moon's distance from the quadrature, radius = r. Then the additional force (PT) $= \frac{c}{178{\cdot}725}$. And the disturbing force (TM) $= \frac{3sc}{178{\cdot}725r}$

Produce TP, and make PR = PL, or TM, and draw RQ perpendicular to TQ. Then QR is the force that accelerates the moon, and PQ is the diminution of its centripetal force.

For the force PR is divided into two forces, P Q, and Q R, of which P Q, acting towards Q, diminishes the moon's centripetal force; and QR being parallel to the tangent at P, accelerates the moon at P.

287. There are therefore four points in the moon's orbit, each 35° 16′ from the quadratures, where the moon's disturbing force makes no alteration in the earth's central force.

For the triangles P K T and P Q R are whence PK : PT : : PQ (PT) : PR (3PK fore 3 P K² = P T², or $3ss = rr$, when $\sqrt{\frac{rr}{3}}$ = S. 35° 16′. And when PQ = diminution of the force is equal to the a which makes no alteration.

The mean force PT is $= \frac{1}{643410}$ of t of gravity of the earth.

For the force of gravity is 3600 times than the force at P.

The whole increase of the centripetal forc

$$\frac{c}{171{\cdot}725} \times \left(1 - \frac{3ss}{rr}\right)$$

For rad $(r) : s : : \text{PT}\left(\frac{c}{178{\cdot}725}\right) :$ $\frac{cs}{178{\cdot}725r}$. And PR = 3PK $= \frac{3cs}{178{\cdot}725}$ rad $(r) : \text{PR}\left(\frac{3cs}{178{\cdot}725r}\right) : : \text{S.R}\ (r) :$ $\frac{3css}{178{\cdot}725rr}$. And PT — PQ = whole ad force $= \frac{1 - \frac{3ss}{rr}}{178{\cdot}725}c$.

If A = sine of twice the moon's distan the quadratures; then the force Q R, ac ing or retarding the moon's motion in its $\frac{3c}{178{\cdot}725} \times \frac{\text{A}}{2r}$.

Let z = S.QPR or KPT = cos. PTK rad $(r) : \text{RP}\left(\frac{3cs}{178{\cdot}725r}\right) : : \text{S.QPR}\ (z) :$ $\frac{3c}{178{\cdot}725rr} \times sz$ = (by trigonometry) $\frac{3}{178}$ $\frac{\text{A}}{2r}$.

288. Hence the moon is accelerated quadrants C A, D B; and retarded in th drants AD, BC; and the force which acc or retards the moon's motion, is greatest octants.

For it is greatest when A is greatest, when 2 C P is ninety degrees, or C P =

The disturbing force TM, in the syziges B, is 2 P T. And therefore the earth's forc the moon in the syziges, is twice as mu minished, as it is increased in the quadrat

The moon's orbit is more flat in the s and more curve in the quadratures; and fore she goes farther from the earth quadratures.

For the orbit will be more curve whe central force is greater, that is in the quadr

289. The motion of the moon's node posing her orbit to be nearly circular, thus found:

In fig. 7, plate XIII, let A q B Q be the orbit, T the earth, P the moon, S A B the the upsides, Q, q the quadratures, m N n t of the nodes. P K, P H, A Z perpendicular T Q and Nn. The force by which the m drawn out of her orbit has been found

ASTRONOMY.

Fig. 1.

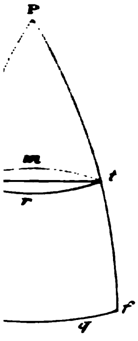


Fig. 2.

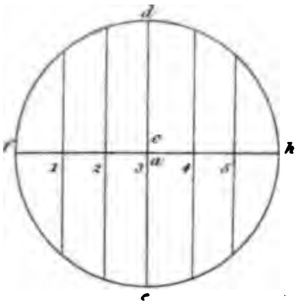


Fig. 3.

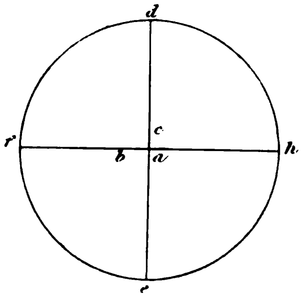


Fig. 4.

Fig. 5.

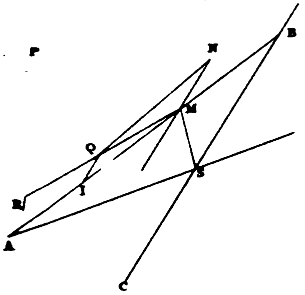


Fig. 6.

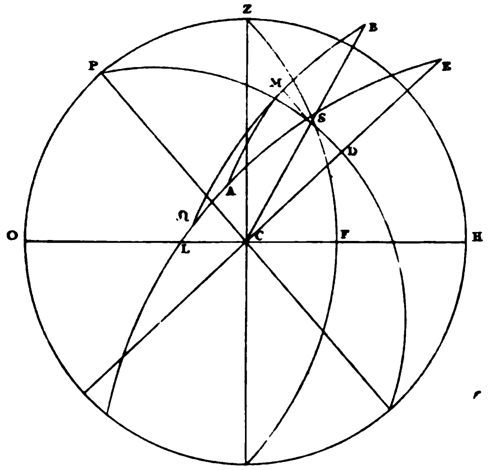


Fig. 8.

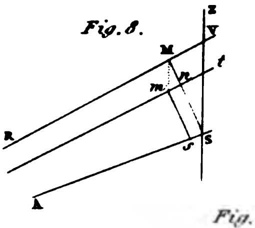


Fig. 9.

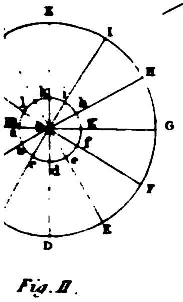


Fig. 10.

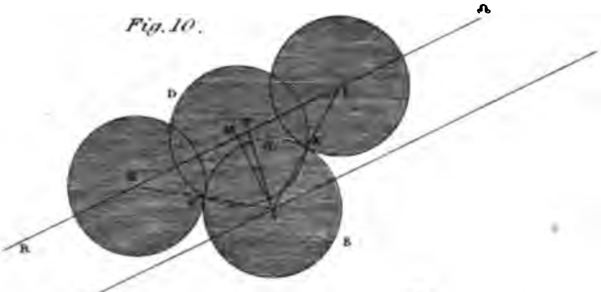


Fig. 11.

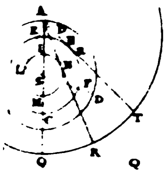


Fig. 12.

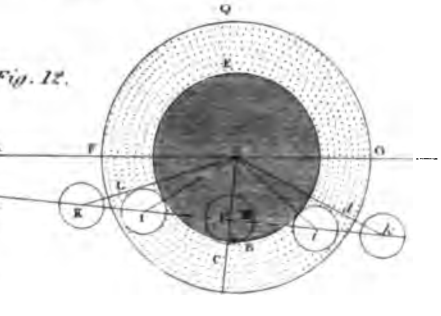
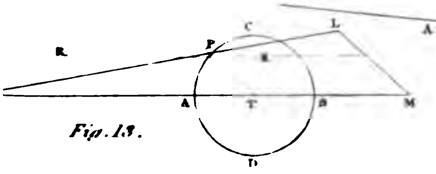


Fig. 13.



London, Published by Thomas Tegg, 73, Cheapside.

J. Shury sculp.

$\frac{\;}{5r}\,c = \frac{s}{59{\cdot}575r}\,c$. Let PM be the arch the moon describes in any small time; L a small line, which the moon describes same time by the force $\frac{s}{59{\cdot}575r}\,c$, as this s directed to the sun, the line ML will be l to TA. As ML is the distance that the is drawn from the arch PM, by the said ative force; 2ML will be the uniform it has acquired in that time, by the said Let MP be continued back to *m*, in the orbit, to cut the line of the nodes TN in ow since ML is parallel to the ecliptic; a lrawn through ML and MP*m*, will cut the in a line *ml*, which will be parallel to herefore draw LP*l* to cut *ml* in *l*, and the es PML and P*ml* are similar, and there- $l = \frac{mP \times ML}{MP}$; but since MP is given, L is as the force 3PK, therefore *ml* is as PK. Now when the moon was at P, the the nodes was at T*m*, where the plane of on's orbit TMP cuts the ecliptic. But, he moon comes to L (instead of M), the of her orbit will then be in the plane and the line of the nodes at T*l*, where ne TLP*l* cuts the ecliptic. Therefore the motion of the nodes generated in that ll be = angle *m*T*l*. But the angle *m*T*l* $\frac{ml}{m}$ × sine of T*ml* or ATN; that is, as $\frac{PK}{\;}$ × AZ; that is, because by similar es $\left(\frac{mP}{mP} = \frac{PH}{PT}\right)$ as $\frac{PH \times PK}{PT} \times AZ$, because PT is given) as PH × PK ×

line ML is to the versed sine of the arch s the forces that produce them; that is, as c to c, or as s to 59·575*r*. That is $\frac{PM^2}{2MT} :: s : 59{\cdot}575r$; therefore $ML = \frac{PM^2}{2MT}$

When P falls upon A, or the moon is syzigy; then $s = r$, and the angle PML ht angle: therefore in the triangle PML, $ML\left(\frac{PM^2}{2MT \times 59{\cdot}575}\right)$ :: radius : S.LPM $= \frac{PM}{2MT \times 59{\cdot}575}$. And if N be at Q, nodes in the quadratures, and P at A; M and PL being parallel to the ecliptic, *l* will be at an infinite distance, and then *m*T*l* will be equal to *m*P*l*, whose sine is $\frac{M}{\;575}$. And the angle *m*T*l* answering the motion of the node, whose sine is $\frac{M}{\;575}$. Suppose PM to be described in r, then PM or the mean horary motion is , whose sine, as it differs insensibly from , we shall have the arch $= \frac{32'\,56''\tfrac{1}{2}}{59{\cdot}575}$ PM = 1) = 33·18″, where all the angles PTK, PTN, and STN are right angles. And in other cases, the horary motion of the node will be to 33·18″, as the product of the sines of the three angles PTK, PTN, and STN, to the radius cube; and the nodes are regressive when all the sines are positive. But if any sine changes to be negative, the nodes will be progressive.

290. Hence the nodes are progressive, when the moon is between either quadrature, and the node nearest that quadrature; otherwise they are regressive. And by the excess of the regress above the progress, they are in the whole moved forward.

For in the arches QA*n* and *q*BN, PK and PH are both affirmative or both negative. And in the arches NQ, *nq*, only one is negative, the other being affirmative.

If it were not for the sun's perturbating force, the moon would always describe the same ellipsis, and the transverse axis and eccentricity of the orbit would remain unaltered. But since the perturbating force of the sun always acts upon her more or less, and causes all the irregularities of her motion; it is evident that all these effects will be the greater as that force is the greater. But when the transverse axis, or line of the apsides, is in the syziges, then the perturbate force TM or 3 PK, fig. 13, plate IX., is the greatest possible, by which the moon is removed farther from the earth, and consequently the transverse axis is lengthened, and the eccentricity becomes greater. And the contrary happens when the transverse is in the quadratures; for by its being in the quadratures, the force LM is greater; and the whole centripetal force towards T being greater, the body will be drawn nearer the earth, and describe a less orbit, or one less eccentric than before. Therefore when the apsides are in the quadratures, the eccentricity is less; and when they are in the syziges, it is greater. But how much it is greater or less depends upon the mean eccentricity; and that depends upon observation.

292. Hence the eccentricity continually increases, as the apsides move from the quadratures to the syziges; and decreases from the syziges to the quadratures. And the eccentricity of the orbit continually increases, as the moon passes from the quadratures to the syziges; and decreases, in passing from the syziges to the quadratures. For the perturbating force increases from the quadratures to the syziges, and decreases from the syziges to the quadratures.

SECT. VI.—OF THE NATURE AND MOTIONS OF COMETS.

293. It is certain that comets are not meteors in our air, because they rise and set in the same manner as the moon and stars. It is long since astronomers had gone so far in their enquiries concerning them, as to prove by their observations that they moved in the celestial spaces beyond the moon; but they had no notion of the path which they described. Now the power of the sun being reciprocally in the duplicate proportion of the distance, every body acted upon by him must either fall directly down or move about him in one of the conic sections. If a

body which descends towards the sun as low as the orbit of any planet, move with a swifter motion than the planet, it will describe an orbit of a more oblong figure than that of the planet, and have at least a longer axis. The velocity of the body may be so great, that it shall move in a parabola, so that having once passed the sun, it shall ascend for ever without returning, though the sun will still continue in the focus of that parabola; and with a velocity still greater, they will move in a hyperbola. The best observations, however, show that the comets move in very eccentric ellipses; and hence those bodies are sometimes found at a moderate distance from the sun, and appear within the planetary regions; at other times they ascend to vast distances, far beyond the orbit of the most distant known planet, and become invisible.

294. The analogy between the periodic times of the planets, and their distances from the sun, discovered by Kepler, of course takes place, also in the comets, at least in those which revolve in elliptic orbits; and consequently, if the periodic time of a comet were known, its mean distance might be easily computed. Now the comet of 1759 is known to perform its revolution in seventy-six years nearly, whence it appears that its mean distance is about eighteen times that of the earth, or a little less than the mean distance of Uranus; but, in consequence of the great eccentricity of its orbit, its aphelion point, or the greatest distance from the sun, is nearly double that of the above planet. The perihelion distance of this comet is about six of the mean distance of the earth, which being taken from 36, the mean transverse axis of its orbit, leaves 35·4 for its aphelion distance, which is nearly double the greatest distance of Uranus, and about four times that of Saturn.

295. The above is the only comet whose periodic return has been ascertained, till the recent re-discovery of Enke's comet, and consequently the only one whose mean distance can be known; but with regard to the perihelion distance of these bodies, this may be determined by observations; and accordingly we have an account of this element of the orbits of about 100 comets, which have been observed with considerable accuracy. The greater number of these have had their perihelion point fall within the terrestrial orbit, and many of them at less than half the mean distance of the earth; but the comet of 1680 is that of all others which approaches the nearest to the sun, its perihelion distance being only ·006 of the perihelion of the earth, that is, about 540,000 miles from the sun's centre, and must, therefore, according to Newton, have been involved in its atmosphere. This comet also passed very near the terrestrial orbit, having been, according to Dr. Halley's calculation on the 11th of November, 1 h. 6 m. P. M., not more than one semi-diameter of the earth, or about 4000 miles to the northward of the earth's orbit, at which time had we been in this part of our track, the comet would have had a parallax exceeding that of the moon; and the mutual gravitation of the two bodies must have caused a change in the inclination of the earth's orbit, and in the length of the year; at the same time the waters on the earth would have
been so elevated from the same cause, as
in all probability have caused a universal
and reduced this beautiful frame to its o
chaos.

296. The limits of a comet's distance
easily ascertained from its tail, it being su
to be directed from the sun. Let S, fig. 9, pla
be the sun, E the earth, E T the line in
the head of the comet appears, E W the
which the extremity of the tail is observe
draw S T parallel to E W; then the co
within the distance E T. For if the come
at T, the tail would be directed in a line p
to E W, and therefore could never appear
line. Now T E W is known from obser
and consequently its equal E T S, togethe
T E S, the angular distance of the comet
the sun, and E S to find S T, the limit
comet's distance.

ON THE ORBITS OF COMETS, AND THEIR P
DICAL REVOLUTIONS.

297. It is extremely difficult to dete
from computation, the elliptic orbit of a co
any degree of accuracy; for when this o
very eccentric, a very small error in the ob
tion will change the computed orbit into a
bola, or hyperbola. Now from the thickne
inequality of the atmosphere with which t
met is surrounded, it is impossible to dete
with any precision, when either the limb o
tre of the comet pass the wire at the t
observation. And this uncertainty in the
vations will subject the computed orbit to
error. Hence it happened, that M. Bo
determined the orbit of the comet in 1729
an hyperbola. M. Euler first determine
same for the comet in 1744; but having re
more accurate observation, he found it to
ellipse. The period of the comet in 168
pears from observations to be 575 years,
M. Euler by his computation determined
166½ years.

298. The only safe way to get the peri
comets, is to compare the elements of all
which have been computed, and where yo
they agree very well, you may conclud
they are elements of the same comet; it be
extremely improbable that the orbits of tw
ferent comets should have the same inclin
the same perihelion distance, and the pla
the perihelion and node of the same.
knowing the periodic time, we get the maj
of the ellipse, and the perihelion distance
known, the minor axis will be known.
the elements of the orbits agree the comet
be the same, although the periodic times
vary a little; as that may arise from the
tion of the bodies in our system, and whic
also alter all the other elements in a small d
The following approximating method of
mining that part of a comet's orbit th
which it moves, while it can be observed
the earth, is due to Boscovich.

299. Having collected the greatest p
number of observations, choose three of them
were taken when the comet was not too n
perihelion, (because near the perihelion th
does not differ sensibly from a circle)

se the basis of the operations: let S,
fig. 6, be the sun, U W the orbit of
supposed here to be a circle, E the
e earth at the first, *e* at the third, draw
to represent the observed directions of
s, and let L, *l*, *w*, be the longitudes of
econd, and third observations, *m* and *n*
tric latitudes of the first and third ob-
and *t*, T, the intervals of time between
nd second, second and third observa-
sume C for the place of the comet at
bservation, reduced to the ecliptic;
termine the place of the third observa-
T × sine $\overline{w-l}$: t × sine $\overline{l-L}$: :
nd *c* will be nearly the place required:
nd it will represent the path of the
the ecliptic, according to this assump-
w C K, *c k*, perpendicular to the eclip-
C K : E C : : tang M : radius, and
tang *n* : radius; join K *k*, and it
ent the orbit of the comet, if the first
n be true. Bisect C *c* in *x*, and draw
l to C K, and K *k* will be bisected in
. Let S E = 1; then if *v* be the mean
the earth in its orbit, the velocity of
at $y = \frac{\sqrt{2}\times v}{\sqrt{sy}}$ (Art. 586), taking there-
c, compute $\frac{\sqrt{2}\times v}{\sqrt{sy}}$ and if this be equal
e assumed point C was the true point.
ut if these quantities be not equal, a
must be assumed for C, in choosing
must be directed by the nature and
f the error arising from the first assump-
s if the computed value of K *k*, be
n its value measured in the figure, and
K, *c k* diverge from each other as they
m the sun, the point *c* must be taken
m E by how great a quantity we must
from the magnitude of the error, and
consideration that the comet's velocity
s as it recedes from the sun. Find
as before, and compare the measured
uted value of K *k*; and if a fresh as-
be necessary, make it in conformity to
erations above suggested. Having thus
d the position of the points C, *c*, very
duce *c* C, *k* K to meet at N; join N S,
l be the line of the nodes; and if C *r*,
wn perpendicular to N S, either of the
r C, *k x c* will measure the inclination
bit. Also from the two distances S C,
the included angle C S *c*, the parabola
sily constructed; thus, having set off
fig. 10, plate VI.) in their proper rela-
ion, with the centres C, *c*, and radii
S C, S *c*, describe the arcs *a* R *o*, *e r i*,
the line R *r d* to touch those arcs, this
manifestly be the directrix of the para-
ich, being known, together with the
nd the determining ratio (that of equa-
parabola may be constructed.
r, letting fall S D perpendicularly upon
bisecting it in A, the vertex and focus of
ola A *c* C will be known; whence it
rawn by well-known methods. From
these constructions, the ratio of the co-
rihelion distance S A (fig. 1. plate IX.) to the earth's mean distance S E (fig. 10. plate VIII.), will be known, and consequently the comet's velocity in perihelion: the velocity in either of the points C, or *c*, will be determined by the observations; and since the angular distances are reciprocally as the squares of the distances from the centre of force, the S C, S *c*, are hence found in terms of S E: if these agree nearly with the construction, the assumptions have been properly made; if not, some farther corrections are necessary. The angles A S C, A S *c*, may either be measured or calculated from the known distances; then having the perihelion distance and the true anomaly, the time from the perihelion may be determined, whence, as the observations will show, whether the comet be approaching to, or receding from, the perihelion, an epoch of the perihelion will readily be ascertained.

302. When a parabola is found to agree nearly with the given positions, it is needless to continue the approximation farther; for if the observations are accurate, we cannot expect a parabola to agree perfectly with them; if the body move in an ellipsis, as it is highly probable that all these bodies do. If the observations are only nearly accurate, a parabola found to agree with them, might probably not agree with other observations made upon the comet.

SECT. VII.—OF THE BODIES OF THE SUN AND PLANETS, THE QUANTITY OF MATTER THEY CONTAIN, AND THEIR DENSITIES.

303. The primary planets and comets being retained in their orbits by a power directed towards the sun, and the secondaries being also retained by a similar power directed to the centre of the primaries, the same power is diffused through their whole substance, and inherent in every particle. This is proved by showing that each of the heavenly bodies attracts the rest, and other bodies, with such different degrees of force, as that the force of the same attracting body is exerted on others, exactly in proportion to the quantity of matter contained in the body attracted.

304. The first proof of this is from the experiments made on bodies on our earth. Pendulums vibrate by the same power which makes heavy bodies fall to the ground; but if the ball of any pendulum of the same length with another were more or less attracted in proportion to the quantity of solid matter it contains, that pendulum would vibrate faster or slower than the other. Now the vibrations of pendulums continue for a long time, and the number of vibrations they make may be easily and correctly determined; and Newton assures us that he examined several substances, as gold, silver, lead, glass, sand, common salt, wood, water, and wheat; in all which he found not the least deviation from the theory, though he made the experiment in such a manner that, in bodies of the same weight, a difference in the quantity of their matter less than the thousandth part of the whole would have discovered itself.

305. It appears, therefore, that all bodies are made to descend here by the power of gravity with the same degree of swiftness. This descent

has been determined at 16½ feet in a second from the beginning of their fall. If any terrestrial body could be conveyed as high as the moon, it would descend with the very same velocity as the incremental deflection of the moon towards the earth; and therefore the power of the earth upon the moon is in the same proportion to its force on other bodies at the same distance as the quantity of matter in the moon bears to the quantity in those bodies. Thus with respect to the earth, its power on every body it attracts is, at the same distance from the earth, proportional to the quantity of solid matter in the body acted upon.

306. As to the sun, the power of his action upon the same primary planet is reciprocally in the duplicate proportion of its distance; and that his power decreases throughout in the same proportion, is testified by the motion of the planets traversing the whole planetary regions. Hence if any planet were removed from the sun to any distance whatever, its tendency towards the sun would yet be reciprocally in the duplicate proportion of the distance. But the degree of acceleration given to the planets by the sun is observed to be reciprocally in the duplicate proportion of their respective distances; from this we may safely infer, that the power of the sun upon any planet removed into the place of any other, would give it the same velocity of descent as it gives that other; and consequently, that the sun's action upon different planets at the same distance would be proportionable to the quantity of matter in each. The sun attracts the primary planets and their respective secondaries, when at the same distance, in such a manner as to communicate to both the same degree of velocity; and therefore the force wherewith the sun acts on the secondary planet, bears the same proportion to the force wherewith it attracts the primary, as the quantity of matter in the secondary planet bears to the quantity of matter in the primary.

307. This property therefore is found in the sun with regard to both kinds of planets; so that he possesses the same quality found in the earth, viz. that of acting on bodies with a degree of force proportional to the quantity of matter they contain. All the phenomena of the planetary motions produced by their mutual attractions agree precisely with this law of force; and we are thence warranted in concluding, that this is the principle which the great Author of nature has appointed to regulate the motions at least of the system to which we belong.

308. In a word, the attractive power both of the sun and the planets appears to be the same; for it acts in each in the same proportion to the distance, and alike upon every particle of matter. This power therefore in the sun and planets, is the same in its nature as the power of gravity in the earth; and hence the attracting power lodged in the sun and planets belongs likewise to every part of them; and their respective powers upon the same body are proportional to the quantity of matter of which they are composed; for instance, the force with which the earth attracts the moon, is to the force with which the sun would attract it at the same distance, as the quantity of solid matter in the earth is to that in the sun.

309. The rule that action is equal to re-action holds good in attractive powers as well as in any other powers. The most remarkable force of this kind with which we are acquainted, next to that of gravity, is the attraction which the loadstone has for iron. Now if a loadstone and piece of iron are both made to swim on water, they move towards each other, and thus the attraction is shown to be mutual; and when they meet, they mutually stop each other; which shows that their velocities are reciprocally proportioned to the quantities of solid matter in each; and that by the stone's attracting the iron, it receives as much motion itself, in the strict philosophic sense of the word, as it communicates to the iron.

310. From this mutual action of the sun and planets upon each other, it follows, as has been already mentioned, that they both revolve about their common centre of gravity. Thus let A (in plate IX. fig. 7.) represent the sun, B a planet, and C their common centre of gravity. If these bodies were once at rest, they would directly approach each other by their mutual attraction, and that with such velocities, that their common centre of gravity would remain at rest, and they would meet in that point. Were the planet B to receive an impulse, as in the direction B E, this would prevent the two bodies from falling together; but their common centre of gravity would be put into motion in the direction of the line C F, parallel to B E. In this case, the sun and planet would describe round their common centre of gravity similar orbits, while that centre would proceed with an uniform velocity in the line C F, and so the system of the two bodies would move on with the centre of gravity without end. In order to keep the system in the same place, it is necessary, that when the planet received its impulse in the direction B E, the sun should receive such another the contrary way, so as to keep the centre of gravity, C, without any motion, in which case it would always remain fixed.

311. The action therefore between the sun and planets is mutual. The power which acts between the sun and primary planets is of the same nature with that which acts between the secondary planets and their primaries, or between the earth and bodies near its surface. In different planets the force of the sun's action upon each at the same distance, would be proportional to the quantity of solid matter contained in the planet: therefore the re-action of the planet on the sun at the same distance, or the motion which he would receive from each planet, would also be proportional to the quantity of matter in the planet; that is, these planets, at the same distance, would act on the same body, with the degrees of strength proportioned to the quantity of solid matter contained in each.

312. From these principles Newton has proved that the particles of which the sun, moon, and planets are formed, exert their power of gravitation by the same law, and in the same proportion to the distance, as the great bodies they compose.

313. The following propositions constitute the principal steps in the process of the investigation. In fig. 4, plate VI., if A B is perpendicular to AC, and a corpuscle at C is attracted

towards every particle of the line A B, by forces inversely as the squares of the distances, then the whole force which the particles in A B exert upon C, in the direction A C, is as $\frac{\mathrm{AD}}{\mathrm{CA} + \mathrm{CD}}$. For put A C $= a$, and A D, any variable part of AB $= x$; then the force of a particle at D being as $\frac{1}{\mathrm{CD}^2}$ in the direction D C, its force in the direction A C, will be as $\frac{\mathrm{AC}}{\mathrm{CD}^3}$; or as $\frac{a}{(a^2 + x^2)^{\frac{3}{2}}}$. Hence $\frac{a \dot{x}}{(a^2 + x^2)^{\frac{3}{2}}}$ represents the fluxion of the whole force, whose fluent is $\frac{x}{a \cdot (a^2 + x^2)^{\frac{1}{2}}}$, or $\frac{\mathrm{AD}}{\mathrm{CA} \times \mathrm{CD}}$.

314. Again, let B C D E, plate VI. fig. 5, represent a circular plane, and H a corpuscle perpendicularly over its centre, then if the forces with which each particle in the plane acts upon H be inversely as the squares of the distances, the force with which H will be urged towards the plane will be represented by $\left(1 - \frac{\mathrm{AH}}{\mathrm{BH}}\right) 2\,p$; p being $= 3{\cdot}14159$, &c. For let A H $= a$, and H $b = x$; then A $b^2 = x^2 - a^2$; and p . A $b^2 = p$. $\overline{x^2 - a^2} =$ the area of the circle, A $c\,d\,b\,e$; and the fluxion of the area of this circle is $2\,p\,x\,\dot{x}$. But the force of a particle at b in the direction HA is as $\frac{\mathrm{AH}}{\mathrm{H}b^3}$, or $\frac{a}{x^3}$, by the preceding proposition; therefore the fluxion of the whole force will be $\frac{2 a p\, x \dot{x}\, a}{x^3} = \frac{2 a p \dot{x}}{x^2}$. The fluent of this corrected, gives $2\,p \times \overline{1 - \frac{a}{x}} = 2\,p \times \overline{1 - \frac{\mathrm{AH}}{\mathrm{BH}}}$ for the whole force.

315. To apply this to the determination of the law of force, by which a particle without a sphere would be acted upon by that sphere, the law of force of each particle in the sphere being inversely as the squares of its distance; let A B E C, plate VI. fig. 3, represent a section of a sphere of which the centre is F; let H be the particle, draw B C perpendicular to H E, join H B and B A. Put A F $= a$, F H $= b$, A H $= \overline{b - a} = c$, H D $= y$ and H B $= c + x$; then A D $= y - c$, E D $= 2\,a - y + c$, and hence BD$^2 =$ AD · DE $=$ HB$^2 -$ HD^2, or $\overline{y - c} \times \overline{2a - y + c} = \overline{c + x}^2 - y^2$, an equation from which we get $y = \frac{2ac + 2c^2 + 2cx + x^2}{2a + 2c} = \frac{2bc + 2cx + x^2}{2b}$, as $a + c = b$. Hence, the attractive force of the particles on the circle whose diameter is B C is, by the last proportion, $= 2p \times \overline{1 - \frac{\mathrm{HD}}{\mathrm{HB}}} = 2p \times \left(1 - \frac{2bc + 2cx + x^2}{2b \times \overline{c + x}}\right) = \frac{2p \times \overline{2ax - x^2}}{2b \cdot \overline{c + x}}$; which multiplied by $\frac{c\dot{x} + x\dot{x}}{b} =$ gives $\frac{p \times 2ax\dot{x} - \dot{x}\dot{x}}{b^2}$ for the fluxion of the required force, and the fluent of this expresssion, $\frac{p \times \overline{a x^2 - \frac{1}{3} x^3}}{b^2}$ is the force of the segment A B C, and therefore when B coincides with E, or $x = 2\,a$, this expression becomes $\frac{4 p a^3}{3 b^2}$ the attractive force of the whole sphere.

316. If the particles, of which the globe is composed, acted upon those without in the reciprocal duplicate proportion of their distances, the whole globe would hence act upon them in the same manner as it does; but, if the particles of the globe have not all of them that property, some must act in a greater, and some in a less proportion; and if this be the condition of the globe, it is plain that when the body attracted is in such a situation in respect of the globe, that the greater number of the strongest particles are nearest to it, the body will be more forcibly attracted than when, by turning the globe about, the greater quantity of weak particles should be nearest, though the distance of the body should remain the same from the centre of the globe; which is contrary to what was at first remarked, that the globe acts equally on all sides. If all the particles of the globe attract all the particles of another in the proportion already mentioned, the attracting globe will act upon the other in the same proportion to the distance between the centre of the globe which attracts, and the centre of that which is attracted: and the proportion holds true, though either or both of the globes be composed of dissimilar parts, some rarer, and some more dense; provided only that all the parts in the same globe, equally distant from the centre, be homogeneous, and likewise if both globes attract each other.

317. It is thus shown, that this power in the great bodies of the universe is derived from the same being lodged in every particle of the matter which composes them; and consequently that it is universal in matter, though the power is too minute to produce any visible effects on the small bodies with which we are conversant, by their action on one another. In the fixed stars indeed we have no particular proof that they have this power, as we find no appearance to demonstrate that they either act or are acted upon by it. But since this power is found to belong to all bodies whereon we can make observation, and we find that it is not altered by any change in the shape of bodies, but accompanies them in every form without diminution, being ever proportional to the quantity of solid matter in each, it is highly probable that such a power belongs universally to all matter.

318. From the times in which the satellites perform their revolutions, compared with their distances from their respective primaries, the proportion between the power with which one primary attracts his satellites, and the force with

which any other attracts his, may be found; and the proportion of the power with which any planet attracts his secondary to the power with which it attracts a body at its surface, is found by comparing the distance of the secondary planet from the centre of the primary with the distance of the primary planet's surface from the same; and from hence is deduced the proportion between the power of gravity upon the surface of one planet to the gravity upon the surface of another.

319. In a like manner by comparing the periodical time of a primary planet about the sun, with the revolution of a satellite about its primary, may be found the proportion of gravity, or of the weight of any body, on the surface of the sun, to the gravity or to the weight of the same body upon the surface of the planet which carries about the satellite.

320. Amongst the ancient mathematicians, nothing could have appeared more completely out of the reach of human intellect, than by calculation to determine the internal structure of remote and inaccessible bodies, that is, than to find the densities of the planets. Such, however, has been effected in modern times. The density of a planet can be found by comparing the velocity in its orbit round the sun with the velocity of its satellite, or by determining the distance which it deflected from its tangent in one second of time, comparing its angular velocity with the mean radius of its orbit, and by knowing the space which a heavy body falls through in one second by the force of gravity at its surface.

321. To understand the principle upon which this determination rests, we may observe that the effect of attraction at equal distances will be in proportion to the quantity of matter in the attracting body; and at different distances, as the quantity of matter and the inverse square of the distance conjointly. The quantity of matter is also in proportion to the magnitude of the body and its density conjointly. If therefore we know the effects of the attraction of different bodies, together with their magnitudes, we can find their densities, and thence their quantities of matter.

To find their densities, put

$d =$ the density of the celestial object,
$m =$ its diameter,
$a =$ its quantity of matter,
$\mathrm{P} =$ the periodic time of the revolving body,
$\mathrm{D} =$ the mean distance of the revolving body from its central body,
$s =$ the sine of the angle under which m appears at the distance D, to radius unity.

Then a varies as $d\,m^3$, and P^2 varies as $\frac{\mathrm{D}^3}{a}$, or as $\frac{\mathrm{D}^3}{d\,m^3}$; hence, d varies as $\frac{\mathrm{D}^3}{m^3\,\mathrm{P}^2}$, but $s = \frac{m}{\mathrm{D}}$; hence, d varies as $\frac{1}{s^3\,\mathrm{P}^2}$.

From this we conclude that the logarithm of the density varies as $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. \mathrm{P}$. But, in order to make the comparison between different planets as simple as possible, we shall suppose the density of the sun to be 1, and find a logarithm, which, taken from the above formula, will make it so. For this purpose we shall take the diameter of the sun = 883,217 miles, its distance from the earth 95,000,000 miles, and the earth's periodic time 365·2564 days. Hence, we have —

$$\begin{array}{rrl}
\text{Log. D} = \text{log.} & 95000000 = & 7{\cdot}9777236 \\
\text{Log. } m = \text{log.} & 883217 = & \underline{5{\cdot}9460674} \\
 & & 2{\cdot}0316562 \times 3 = 6{\cdot}0949686 \\
\text{Log. P} = \text{log.} & 365{\cdot}2564 = & 2{\cdot}5625978 \times 2 = \underline{5{\cdot}1251956} \\
 & & \qquad\qquad\qquad 0{\cdot}9697730
\end{array}$$

the logarithm of the sun's density. But the logarithm of 1 is 0; hence the logarithm of the density of a planet is to that of the sun, considered as unity, as 1 to $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log \mathrm{P} - {\cdot}9697730$.

323. To find the density of the earth, we take the moon as the revolving, and the earth as the central body. $\mathrm{D} = 240000$, $m = 7955$, and $\mathrm{P} = 27{\cdot}32167$; and $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. \mathrm{P} - {\cdot}9697730$ is then equal to ·5959255, the log. of 3·9439.

To find the density of Jupiter. If we take the first satellite as the revolving body, we shall have $\frac{\mathrm{D}}{m} = 2{\cdot}8385$ and $\mathrm{P} = 1{\cdot}7691$; hence $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. {\cdot}9697730$ is then equal to 1·8916918 the log. of ·7793.

324. Again, if we take the fourth satellite, we shall have $\frac{\mathrm{D}}{m} = 12{\cdot}65$ and $\mathrm{P} = 16{\cdot}68898$, therefore $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. \mathrm{P} - {\cdot}9697730$ is the equal to — 1·8916389 the log. of ·7792.

325. To find the density of Saturn, if we take the second satellite we shall have $\frac{\mathrm{D}}{m} = 2{\cdot}75$, and $\mathrm{P} = 2{\cdot}7368$, therefore $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. \mathrm{P} - {\cdot}9697730$ is equal to — 1·4737389, the log. of ·2977. Let us take the fifth; then we have $\frac{\mathrm{D}}{m} = 27$, and $\mathrm{P} = 79{\cdot}3196$. Hence $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. \mathrm{P} - {\cdot}9697730$ is equal to — 1·5255573 the log. of ·3354.

326. To find the density of Uranus, if we take the third satellite we shall have $\frac{\mathrm{D}}{m} = 9{\cdot}5$, and $\mathrm{P} = 10{\cdot}9611$, then $3 \times \log \frac{\mathrm{D}}{m} - 2 \log$ of $\mathrm{P} - {\cdot}9697730$ is equal to — 1·8836886, the log. of 7650.

Again, let us take the sixth satellite, and we shall have $\frac{\mathrm{D}}{m} = 44$, and $\mathrm{P} = 107{\cdot}6944$; hence, $3 \times \log. \frac{\mathrm{D}}{m} - 2 \log. \mathrm{P} - {\cdot}9697730$ is equal to

— 1·8961985 the log. of 7874. A trifling difference, either in the periodic time, or the distance of the satellite, will make a considerable difference in the density of the primary; and hence, if these be not very correct, the density cannot be depended on with any degree of accuracy.

327. The above are the only planets whose densities can be found by this method. Those which have no satellite, have obliged astronomers to have resource to a method much less accurate, depending on the effect, which by observation the planet is found to produce in disturbing the motions of the other planets. Dr. Maskelyne makes the density of Venus 1·024, and M. de la Lande 1·038, that of the earth being 1. Laplace concludes the density of Mars to be ·4563, and of Mercury 2·5833, the earth being 1. The density of the moon has been estimated at 1·456 times the density of the earth.

If the density of the earth be taken equal to 4½ times that of water, we shall have the densities, or specific gravities, of the planets in the following proportions :—

Sun	1·1410 nearly	= to the specific gravity of opaque copal
Mercury	11·6250	. . . lead
Venus	4·6395	. . . molybdæna
Earth	4·5000	. . . ponderous spar
Moon	6·5520	. . . cast antimony
Mars	2·9533	. . . flint glass
Jupiter	0·8891	. . . mulberry tree
Saturn	0·3612	. . . poplar
Uranus	0·8856	. . . beech tree.

PART III.

EXPLANATION OF THE CELESTIAL PHENOMENA, ACCORDING TO THE NEWTONIAN DOCTRINE.

Sect. I.—Of the Circles, Nodes, Aspects, Conjunctions, &c. of the Planets.

328. To a spectator placed in the sun all the planets would appear to describe circles annually in the heavens; for, though their motions are really elliptical, the eccentricity is so small, that the difference between them and true circles is not easily perceived, even on earth; and at the sun, whether great or small, it would entirely vanish. These circles, which in such a situation would appear to be annually described among the fixed stars, are called the heliocentric circles of the planets. To a spectator in the sun, the comets, though moving in the most eccentric orbits, would also appear to describe circles in the heavens: for, though their orbits are in reality very long ellipses, the planes of them extended to the heavens would mark a great circle of which the eye would be the centre; only, as the real motion is in an ellipsis, the body would appear to move much more slowly in some part of the circle than another, and to differ excessively in magnitude.

329. To an inhabitant of any planet, however, the sun appears to go round in its own heliocentric circle, or to describe in the heavens that same curve, which the planet would appear to do if seen from the sun. Thus, in plate XVI. fig. 8, when the earth is at *a*, if we draw a line from *a* through the sun at S, the point G, in the sphere of the heavens where the line terminates, is the place where the sun then appears to an inhabitant of the earth. In a month's time the earth will go from *a* to *b*; draw a line then through the sun, and its extremity at H will point out his apparent place at that time. In like manner, if we draw lines from the earth in twelve several situations, in which it is represented for the twelve months of the year, the sun's apparent place will be found as above; and so it would be found by a spectator placed in Venus, or any other planet.

330. The heliocentric circle of the earth is called the ecliptic; because eclipses of the sun or moon can only happen when the latter is in or near it. By some ancient writers it has been called the circle of the sun, or the oblique circle, because it cuts the equator at oblique angles. It is also called by Ptolemy the circle which passes through the midst of the animals; because the twelve constellations through which it passes, were anciently all represented by animals, or parts of them, though now the balance is introduced in place of the claws of the scorpion. For this reason a belt, taken in the concave sphere of the heavens, about ten degrees on each side of the ecliptic, is called the zodiac, from ζωον, an animal, and the constellations through which the ecliptic is drawn, are called the constellations of the zodiac.

331. Although the sun apparently goes round the earth annually in this circle, we cannot determine his place by mere inspection, as we can do that of any other heavenly body; for the fixed stars are the only marks by which we can determine the place of any of the celestial bodies; and the superior brightness of the sun renders them totally invisible, except in the time of a great eclipse, when his light is for a time totally obscured. But though we cannot know the place of the sun directly, it is easily found from a knowledge of those fixed stars which are opposite to him.

332. Thus, in plate IX. fig. 9, suppose it the time of the year in which the earth is at *g*, if we know that the point G is then diametrically opposite to the sun, we know that A, its opposite, is the sun's place, and consequently, by finding the places throughout the year diametrically opposite to the sun, as G H I K L M A B C D E F, we may be assured that in these times the sun's place was in the points A B C D E F G H I K L M. The point in the heavens diametrically opposite to the sun may be known every night at twelve o'clock when the stars are visible; for the star which has an elevation above the horizon, at that time equal to the sun's depression below it, is directly opposite to him.

333. When the position of the ecliptic is thus determined, the latitude of the moon, or any star, is measured by its distance from the ecliptic, in the same manner as the latitudes of places on the earth are reckoned by their distance from the equator, and circles passing through the poles of the ecliptic at right angles to its plane, are called circles of latitude. The declination of any celestial body is its deviation from the equator towards the pole nearest to it.

334. The latitude of any planet is either heliocentric or geocentric. The heliocentric latitude is its distance from the ecliptic as seen from the sun, and its geocentric as seen from the earth. As the orbits of the planets are inclined in different angles to the ecliptic, the heliocentric latitude of any planet, is almost always different from its geocentric latitude. Thus, let A B, plate VII. fig. 11, be the orbit of the earth, C D the orbit of Venus, viewed with the eye in their common section, wherein they appear straight lines; let E and F be two opposite points of the ecliptic; and suppose Venus to be in the point C. If she were at that time viewed from the sun S, she would appear in the point of the heavens marked H, and her heliocentric latitude is then F H; but if viewed from the earth in B, she will appear at *g*; and her geocentric is only F *g*.

335. The planets Mercury and Venus, whose orbits are included in that of the earth, are called inferior; and Mars, Jupiter, Saturn, and the Georgium Sidus, are called superior planets. The two points where the heliocentric circle of any planet cuts the ecliptic, are called its nodes; and that which the planet passes through as it goes into north latitude, is called the ascending node, and is marked thus ☊ ; and the opposite to this is called the descending node, and is marked ☋. A line drawn from one node to the other is called the line of the nodes of the planet, which is the common section of the plane of the ecliptic, and that of the planet produced on each side to the fixed stars.

336. The zodiac is either astral or local. The astral is divided into twelve unequal parts, because it contains twelve celestial constellations, some of which are larger than others. The local zodiac is divided into twelve equal parts, called signs, each containing thirty degrees. These are counted from the point where the equator and ecliptic intersect each other at the time of the vernal equinox; and are denoted by particular marks, according to the apparent annual motion of the sun. See plate V. fig. 6. A motion in the heavens in the order of these signs, as from Aries to Taurus, is said to be a motion in consequence; and such are the true motions of all the planets, though their apparent motions are sometimes contrary, and then they are said to move in antecedence. The local zodiac is not always invariably the same as to the places of the several signs, though the whole always takes up the same place in the heavens, viz. ten degrees on each side the ecliptic. The points where the celestial equator cuts the ecliptic, are found to have a motion in antecedence of about fifty seconds a year.

337. This change of place of the first point of the ecliptic, from whence the signs are counted, occasions a like change in the signs themselves; which, though scarcely sensible for a few years, has now become very considerable. Thus, since astronomy was first cultivated among the Greeks, which is about 2000 years ago, the first point of the ecliptic is removed backward above a whole sign: and, though it was then about the middle of the constellation Aries, is now about the middle of Pisces. Notwithstanding this alteration, however, the signs still retain their ancient names and marks. When the zodiac is mentioned by astronomers, the local zodiac is generally meant.

338. The longitude of a phenomenon in the heavens is in the number of degrees counted from the first point of Aries on the ecliptic to the place where a circle of latitude drawn through the phenomenon would cut the ecliptic at right angles. Every phenomenon in the heavens, whether in the zodiac or not, is thus referred to the ecliptic by its circle of latitude, or great circle, passing through the phenomenon, and cutting the ecliptic at right angles; and whatever sign the circle of latitude passes through, the phenomenon is said to have its place in that sign, though ever so far distant from it.

339. Some astronomers make the local zodiac invariable; for which purpose they imagine a circle of latitude drawn through the first star of the constellation Aries, marked in Bayer's catalogue by the Greek letter γ; and reckon their longitude from the point where that circle cuts the ecliptic. This star is called the first star of the Ram; and, when this method is made use of, the longitude of any phenomenon is said to be so many signs, degrees, minutes, &c. from the first star of the Ram. Thus, in Street's Caroline Tables, the longitude of Jupiter's ascending node is two signs eight degrees from the first star of Aries, which is thus marked: Long. ♃ ☊ *a* 1^s ♈ 2^s 8°. The common way of reckoning the longitude of a phenomenon, is to take ♈ for the first point of the ecliptic, and not to number the degrees quite round that circle as a continued series, but to make a new beginning at the first point of every sign, and to reckon from thence only the length of 30°. When this method is made use of, the longitude of any phenomenon is expressed by saying it is in such a degree, and such a minute of a sign: and thus we may express the longitude of the ascending node of Mercury, ☿ ☊ ♉ 13° 40′, and so of any other. The place of a phenomenon in the heavens is expressed by setting down its longitude and latitude.

340. Every planet, like the moon, is sometimes in conjunction with the sun, and sometimes in opposition. Its conjunction is when the geocentric place of the planet is the same with that of the sun; though an exact or central conjunction can only take place when the line of its nodes passes through the earth, and the planet itself is in one of its nodes at the time. It is however, in general, called a conjunction or opposition, when the same circle of latitude passes through the sun and planet at the same time. When the geocentric place of a planet is 90°, or a quarter of a circle from the sun's place, the planet is said to be in quadrature or in a quartile aspect with the sun; and these terms are used in a like sense when applied to any two of the heavenly bodies. Thus the sun and moon, or the moon and any planet, or any two planets, may be in conjunction, opposition, or quadrature.

341. Besides these, the ancients reckoned two other aspects, the trine and the sextile; the former when the bodies were distant 120°, and the latter when only half that distance. These aspects are marked thus:

Conjunct.	Opposition	Quadra.	Trine	Sextile
☌	☍	□	△	*

ts were formerly supposed to influence
of mankind; but astrology, which
these influences, is now justly re-

he inferior planets have two kinds of
n with the sun; one in the inferior part
micircles, the other in the superior part.
mer the planet is between the earth
n; and in the latter the sun is between
and planet. The inferior planets can
n opposition to the sun, nor even ap-
great distance from him. The length
s called their elongation. Thus, in
fig. 11, let OPQRT be part of the
S the sun; and the three circles round
bits of Mercury, Venus, and the earth.
he earth to be at A, the sun's geocen-
will be at Q. If Mercury be then at
centric place is likewise at Q; so that
njunction with the sun in his inferior
: if at M, his geocentric place is like-
; so that he is in conjunction in his
emicircle.
like manner, Venus at E is in con-
n her inferior semicircle, at G in her
but if we suppose the earth to be at A,
s at H, her geocentric place is T, and
ation QT, which in this figure is the
ossible; for this always takes place
aight line from the earth touches the
e planet, as is evident from the figure;
vided the planet be in its aphelion at
Thus the greatest possible elongation
y is QP when he is in his aphelion at
e quantity of this is found by astrono-
ervations to be about twenty-eight
nd that of Venus about forty-eight.
ior planets in their elongations are
eastward and sometimes westward of
n the former case they appear in the
nd in the latter in the morning. The
of Mercury and his nearness to the sun
m from being often taken notice of;
argeness and beauty of Venus have
in all ages, celebrated as the evening
ng star.
he planets sometimes appear to go
ometimes backward, and sometimes to
l. These different conditions are by
rs called direct, retrograde, and station-
re they to be viewed from the sun they
ways appear direct; but when viewed
arth, the inferior planets appear direct
wing in their upper semicircles, and
when in their lower ones. Thus in
fig. 11, suppose the earth at rest at A,
rcury is going on his orbit from N to I,
I to L, his motion appears to an ob-
A to be retrograde, or contrary to the
the signs, namely from R to Q and
P; but when in that part of his orbit
between L and N, his motion appears
from P to Q and from Q to R.
hen the earth is in the line of nodes of
r planet, the apparent motion of the
then in a straight line, because the
t passes through the eye; if in a con-
n his upper semicircle, he passes behind
if in his lower semicircle, he passes

before it, and will then be seen by an observer on the earth to pass over the sun's disk like a round and very black spot. Were the plane of his orbit coincident with the ecliptic, this appearance would be seen every year; but by reason of the obliquity of the two planes to each other, it is much more rare.

346. Mercury, however, was seen in this manner November 12th, 1782, at 3 h. 44 m. in the afternoon; May 4th, 1786, at 6 h. 57m. in the morning; and December 6th, 1789, at 3 h. 55 m. in the afternoon; but was not seen again, in this island at least, until the year 1799, May 7th, at 2 h. 34 m. in the afternoon. In like manner, Venus sometimes appears as a black spot on the sun, but more seldom than Mercury. She was thus seen first in 1639; afterwards in the years 1761 and 1769; but will not again be visible in this manner till the year 1874.

347. When the earth is out of the line of the nodes of an inferior planet, its orbit appears an ellipsis, more or less eccentric, according to the situation of the eye of the spectator. In these cases the motion of Mercury is unequal; faster near the inferior conjunction, but most unequal in the inferior semicircle, going through the unequal spaces into which the ellipsis is divided. The motions of the inferior planets, both direct and retrograde, are very unequal; and this inequality proceeds not from the eccentricity of their orbits, but from the projection of their orbits into long ellipses, and is therefore a mere optical deception.

348. These planets appear stationary while changing their motion from direct to retrograde, or from retrograde to direct. If the earth stood still, the times of their appearing stationary would be at their greatest elongation; for though it be a property of the circle, that a straight line can only touch it in one point, yet when the circle is very large, the recess from the tangent is not perceptible for a considerable time. Thus in plate IX. fig. 11, suppose the earth to be at rest in A Venus would appear stationary, her geocentric place continuing at T all the while she is going in her orbit from *a* to *b*; because her deviation from the visual line AT would scarcely be perceptible so near the point of contact H.

349. The inferior planets, therefore, to an inhabitant of the earth, appear always near the sun, alternately going from and returning to him, sometimes in straight lines, at others in elliptical curves, first on one side and then on the other; sometimes so near as to be rendered invisible by his stronger light. Sometimes, when in or near their nodes, they pass behind the sun in their superior semicircles, or pass between him and us; in which case they appear like black spots on his disk, as above-mentioned. For the better comprehending of these motions, however, we have hitherto supposed the earth to stand still in some part of its orbit, while they go round the sun in theirs; but as this is not the case, it now remains to consider the changes which take place in consequence of the earth's motion.

350. Were the earth to stand still in any part of its orbit, as at A, the places of conjunction, both in the superior and inferior semicircle, are also of the greatest elongation; and, consequently,

the places of direct and retrograde motion, and of the stations of an inferior planet, would always be in the same part of the heavens. Thus, in plate IX. fig. 11, upon this supposition, the places of Mercury's stations would always be the points P and R, the arc of his direct motion P R, and of his retrograde motion R P; whereas, on account of the earth's motion, the places where these appearances happen are continually advancing forward in the ecliptic, according to the order of the signs. In fig. 10, plate VIII., let A B C D be the orbit of the earth; *e f g h* that of Mercury, ☉ the sun; G F K I an arc of the ecliptic extended to the fixed stars. When the earth is at A, the sun's geocentric place is at F; and Mercury, in order to a conjunction, must be in the line A F; that is, in his orbit he must be at *f* or *h*. Suppose him to be at *f*, in his inferior semicircle; if the earth stood still at A, his next conjunction would be when he is in his superior semicircles at *h*; the places of his greatest elongation also would be at *e* and *g*, and in the ecliptic at E and G; but supposing the earth to go on in its orbit from A to B, the sun's geocentric place is now at K; and Mercury, in order to be in conjunction, ought to be in the line B K at *m*. As by the motion of the earth, the places of Mercury's conjunctions with the sun, are thus continually carried round in the ecliptic, in consequence, so the places of his utmost elongations must be carried in consequence also. Thus, when the earth is at A, the places of his greatest elongation from the sun are in the ecliptic E and G; the motion of the earth from A to B advances them forward from G to L, and from E to I.

351. The geocentric motion of Venus may be explained in a similar manner; only as the motion of Venus is much slower than that of Mercury, his conjunctions, oppositions, elongations, and stations, all return much more frequently than those of Venus.

352. To explain the stationary appearances of the planets, it must be remembered that the diameter of the earth's orbit, and even of that of Saturn, are but mere points in comparison of the distance of the fixed stars; and, therefore, any two lines, absolutely parallel, though drawn at the distance of the diameter of Saturn's orbit from each other, would if continued to the fixed stars, appear to us to terminate in the same point. Let the two circles, plate IX. fig. 4, represent the orbits of Venus and of the earth; let the lines A E, B F, C G, D H, be parallel to S P; we may nevertheless affirm that, if continued to the distance of the fixed stars, they would all terminate in the same point with the line S P. Suppose, then, Venus at E, while the earth is at A, the visual ray, by which she is seen, is in the line A E. Suppose again, that while Venus goes from E to F, the earth goes from A to B, the visual ray, by which Venus is now seen, is B F, parallel to A E; and therefore, Venus will be all that time stationary, appearing in that point of the heavens where S P extended would terminate; this station is at her changing from direct to retrograde. Again, suppose, when the earth is at C, Venus is at G, and the visual line C G; if, while the earth goes from C to D, Venus goes from G to H, so that she is seen in the line G H, par
to C G, she will be all that time stationary,
pearing in the point where a line drawn fro
through P would terminate. This station
her changing from retrograde to direct; and
are in her inferior semicircle.

353. An inferior planet, when in conjunc
with the sun, in its inferior semicircle, is sa
be in perigee, and when in the other, to b
apogee, on account of its different distances
the earth. Their real distances from the
when in perigee are variable, partly owin
the eccentricities of their orbits, as well as
of the earth; and partly owing to the motio
the different bodies, by which it happens
they are in perigee, in different parts of
orbits. The least possible distance is wher
perigee happens at the time that the ear
in its perihelion, and when the planet is
aphelion.

354. The difference of distance betwee
earth and inferior planets, at different ti
makes a considerable variation in their app
diameters, which indeed is very observable i
the planets; and thus, they sometimes look
siderably larger than at others. This differ
of magnitude in Mercury is nearly as 5¼
and in Venus, no less than 32 to 1. Any pe
unassisted by instruments, may observe a
ferior planet alternately approach nearer
nearer the sun, until at last it comes into
junction with him, and then recedes farther
farther, till it is at its greatest elongation,
will be first on one side, and then on the o
but, if we observe the apparent change of p
of an inferior planet, in the sphere of the hea
its direct motions, stations, and retrogradat
measuring its diameter frequently with the
crometer, we shall find, by its decrease at
times, and increase at others, that its dist
from us is very considerably varied.

355. As the superior planets move in a la
orbit than the earth, they can only be in
junction with the sun, when they are on that
opposite to the earth; as, on the other h
they are in opposition to him, when the earth
between the sun and them. They are in qu
drature with him, when the geocentric plac
are 90° distant from that of the sun. In ord
to understand their apparent motions, we shal
suppose them to stand still, in some part of
their orbit, while the earth makes a complete
revolution in hers; in which case, any superior
planet would then have the following appearances:

356. 1. While the earth is in her most distant semicircle, the motion of the planet will be direct. 2. While the earth is in her nearest semicircle, the planet will be retrograde. 3. While the earth is near those places of its orbit, where a line drawn from the planet would be a tangent, it would appear to be stationary. Thus, in plate VIII. fig. 6, let *a b c d* represent the orbit of the earth; S the sun; E F G an arc of the orbit of Jupiter; A B C an arc of the ecliptic, projected on the sphere of the fixed stars. Suppose Jupiter to continue at F, while the earth goes round in her orbit, according to the order of the letters *a b c d*. While the earth is in the

e most distant from Jupiter, going from
d from *e* to *c*, his motion in the heavens
ppear direct, or from A to B, and from
but, while the earth is in its nearest
e c d e, the motion of Jupiter would ap-
grade from C to B, and from B to A;
, *d*, may be considered as so many dif-
tions, from whence an inhabitant of the
ld view Jupiter at different séasons of
and a straight line drawn from each of
ons, through F the place of Jupiter,
ued to the ecliptic, would show his
place there to be successively at A, B,
While the earth is near the points of
nd *c*, Jupiter would appear stationary,
e visual ray drawn through both pla-
not sensibly differ from the tangent
When the earth is at *b*, a line drawn
ugh S and F to the ecliptic, shows
be in conjunction with the sun at B.
earth is at *d*, a line drawn from *d*
continued to the ecliptic, would ter-
a point opposite to B; which shows
n to be in opposition to the sun; and
pears, that his motion is direct in the
, but retrograde when in opposition
m.

e direct motion of a superior planet is
nearer it is to a conjunction, and
t approaches to a quadrature with the
Thus, in fig. 9, plate XIII., let ⊙ be
he little circle round it the orbit of the
reof *a b c d e f g* is the most distant
; OPQ, an arc of the orbit of Jupiter;
DEFG, an arc of the ecliptic in the
the fixed stars. If we suppose Ju-
and still at P, by the earth's motion
g, he would appear to move direct
G, describing the unequal arcs AB,
DE, EF, FG, in equal times. When
s at *d*, Jupiter is in conjunction with
D, and there his direct motion is
When the earth is in that part of her
a line drawn from Jupiter would
in the points *c* or *g*, Jupiter is
quadrature with the sun; and the
earth is to any of these points, the
e geocentric motion of Jupiter; for
D and DE are greater than BC or
e arcs BC and EF are greater than

retrograde motion of a superior
ifter the nearer it is to an opposition,
as it approaches to a quadrature
. Thus, let ⊙, fig. 10, plate XIII.
he little circle round it the orbit of
ereof *g h i k l m n* is the nearest se-
PQ, an arc of the orbit of Jupiter,
c of the ecliptic: if we suppose Ju-
d still at P, by the earth's motion
, he would appear to move retro-
G to N, describing the unequal arcs
K, KL, LM, MN, in equal times.
rth is at *k*, Jupiter appears at K, in
o the sun, and there his retrograde
iftest. When the earth is either at
oints of contact of the tangents *Pg*
piter is nearly in quadrature with
d the nearer he is to either of these

points, the slower is his retrogradation; for the arcs IK and KL are greater than HI or LM; and the arcs HI and KM are greater than GH or MN. Since the direct motion is swifter when the earth is at *d*, and continues diminishing till it changes to retrograde, it must be insensible near the time of change; and, in like manner, the retrograde motion being swiftest when the earth is in *k*, and diminishing gradually till it changes to direct, must also at the time of that change be insensible; for any motion gradually decreasing till it changes into a contrary one gradually increasing, must at the time of the change be altogether insensible.

359. The same changes in the apparent motions of this planet will also take place, if we suppose him to go on slowly in his orbit; only they will happen every year when the earth is in different parts of her orbit, and consequently at different times of the year. Thus, fig. 6, plate VIII., let us suppose that while the earth goes round her orbit Jupiter goes from F to G, the points of the earth's orbit from which Jupiter will now appear to be stationary, will be *a* and *y*; and consequently his stations must be at a time of the year different from the former. The conjunction of Jupiter with the sun will now be when the earth is at *f*, and his opposition when it is at *e*; for which reason these also will happen at times of the year different from those of the preceding opposition and conjunction. The motion of Saturn is so slow, that it makes but little alteration either in the times or places of his conjunction or opposition; and no doubt the same will take place in a more eminent degree in Herschel; but the motion of Mars is so much swifter than even that of Jupiter, that both the times and places of his conjunctions and oppositions are thereby very much altered.

360. A superior planet is in apogee when in conjunction with the sun, and in perigee when in opposition; and every one of the superior planets is at its least possible distance from the earth where it is in perigee and perihelion at the same time. Their apparent diameters are variable, according to their distances, like those of the inferior planets; and this, as might naturally be expected, is most remarkable in the planet Mars, who is nearest us. In his nearest approach, this planet is twenty-five times larger than when farthest off, Jupiter twice and a half, and Saturn once and a half. As the times of conjunction, utmost elongation, direct or retrograde motions of the inferior planets, depend on the combinations of their motions in their orbits with the motion of the earth in its orbit, any of these appearances will be more frequent in Mercury than in Venus, because the former moves with a swifter motion in his orbit, and consequently must more frequently pass through those places where he is in conjunction, &c.

361. The time in which any of the inferior planets will return into a given situation, may be easily known. Compute the diurnal heliocentric motions of Venus and of the earth; the difference of these motions is the diurnal motion of Venus from the earth, or the quantity by which Venus would be seen to recede from the earth every day by a spectator placed in the sun: thus

the mean motion of Venus is every day about 59 m. and 8 s.; the difference is 37 m. Therefore, as 37 m. is to 360°, or to 21,600 m. so is one day to the time wherein Venus, having left the earth, recedes from her 360°; that is, to the time wherein she returns to the earth again, or the time between two conjunctions of the same kind.

362. The calculations of the times are here made according to the mean or equable motions of the planets; and is therefore called a mean conjunction: but because Venus and the earth are really carried in elliptic orbits, in which their motions are sometimes swifter and sometimes slower, the true conjunctions may happen some days either sooner or later than what these rules will give. The time of the true conjunction is to be computed from that of the mean conjunction in the following manner. Find by astronomical tables the places of Venus and the earth in the ecliptic, from which we shall have the distance of the two as seen from the sun; compute also for the same time the angular motions of these two planets for any given time, suppose six hours; the difference of these two motions will give the access of Venus to the earth, or her recess from it in six hours. As this difference is to the arc between the places of Venus and the earth at the time of a mean conjunction, so is six hours to the time between the mean conjunction and the true. This time added to, or subtracted from, the time of the mean conjunction, according as Venus is in antecedence or consequence from the earth, shows the time of their true conjunction.

363. As to the conjunctions, oppositions, direct and retrograde motions, &c. of the superior planets, they depend on the combinations of their motions with that of the earth, and are more frequent in Saturn than in Jupiter, and in Jupiter than in Mars, but most frequent of all in Herschel; because the slower the motion of the planet is, the sooner the earth will overtake it, so as to have it again in any given situation.

364. Thus, suppose Saturn to be in conjunction with the sun in ♈, if he were to stand still for one year, then he would again be in conjunction in ♈; but as he goes on slowly, according to the order of the signs, about 12° annually, the earth must go through almost 13° more than an entire revolution; so that there will be almost a year and thirteen days between any conjunction between the sun and Saturn and the conjunction immediately following. As Jupiter moves in his orbit with greater velocity than Saturn, the earth must have a proportionably larger space added to the year; and, as Mars moves swifter still, the time betwixt any two of his conjunctions must be still longer. The time when a superior planet will return into any given situation may be found by the methods already laid down for the inferior planets; and the true conjunctions, &c. may be found in the superior planets as in the inferior.

Sect. II. Of the Velocity, Figure, Motions, &c. of the Earth.

365. The earth is 95,173,000 miles from the sun, and goes round in 365 days, five hours, forty-nine minutes, from any equinox or solstice to t
same again; but from any fixed star to the sam
again, as seen from the sun, in 365 days, s
hours, nine minutes; the former being the lengt
of the tropical year, and the latter the length
the sideral. It travels at the rate of 68,000 mil
every hour; a motion which, though upwards o
140 times swifter than that of a cannon ball, i
little more than half as swift as Mercury's mo
tion in his orbit. The earth's diameter is 79
miles; and by turning round its axis ever
twenty-four hours, from west to east, it causes
apparent diurnal motion of all the heaven
bodies from east to west. By this rapid motio
of the earth on its axis, the inhabitants about t
equator are carried 1042 miles every hour, whi
those on the parallel of London are carried on
about 580, besides the 68,000 miles by the an
nual motion above-mentioned, which is com
mon to all places whatever.

366. A variety of circumstances afford t
clearest evidence that the earth is of a global
figure. 1. When we are at sea on board a shi
we may be out of sight of land, when the land
near enough to be visible, if it were not hid fro
our eye by the convexity of the water. Th
let A B C D, fig. 11, plate VIII., represent a po
tion of the globe of the earth. Let M be t
top of a mountain, this cannot be seen by a pe
son on board the ship at B, because a line draw
from M to his eye at E, is intercepted by t
convexity of the water; but let the ship come
C, then the mountain will be visible, because
line may be drawn from M to his eye at E.
The higher the eye the farther the view will
extended. It is very common for sailors fro
the top of the mast of a ship, to discover land
ships at a much greater distance than they ca
do when they stand upon deck. 3. When w
stand on shore, the highest part of a ship
visible at the greatest distance. If a ship
going from us out to sea, we shall continue to se
the mast after the hull or body of the ship disap
pears, and the top of the mast will continue t
be seen the longest. If a ship is coming to
wards us, the top of the mast comes first in view
and we see more and more till at last the hu
appears. If the surface of the sea were a fl
plain, a line might be drawn from any object si
tuated upon it, as the ship D, fig. 12, plate VIII
to the eye, whether placed high or low, at A o
B. In this case, any object upon the earth o
sea would be visible at any distance which wa
not so great as to make the appearance of it t
faint, or the angle under which it appears to
small, to be seen by us. An object would b
visible at the same distance, whether the eye wer
high or low. Not the highest, but the larges
objects would be visible to the greatest distanc
so that we should be able to see the hulk of
ship farther off than the mast.

367. 4. Several navigators, such as Fe
dinand Magellan, Sir Francis Drake, Lo
Anson, Captain Cook, &c. have sailed roun
the globe; not in an exact circle, the land pr
venting them, but by going in and out as t
shores happened to lie. 5. All the appea
ances in the heavens are the same, whether
land or sea. 6. Eclipses of the moon ar

e shadow of the earth, which is always
r. Although the earth presents, during
hours, different portions of its surface to
on, yet still the shadow is round. The
nequalities upon the surface of the earth
kind of proportion to its magnitude, suf-
to alter the appearance of its shadow.

7. The globular figure of the earth is
ferred from the operation of levelling, in
it is found necessary, to make an allow-
r the difference between the apparent and
vel.

The earth's axis makes an angle of 23½°
e axis of its orbit, and its position at any
parallel to its position at any other time.
t points always to the same quarter of the
s, throughout its annual course. That the
moves round the sun may be proved,
l a doubt, by the following arguments.

I. The sun is found by the most accurate
tions, to be immensely larger than the
for his diameter, as seen by us, subtends
le of more than 30′, but it is certain that
th, were it seen from the sun, would not
d a greater angle than about 17″. If,
re, the sun be formed of materials not
ch rarer than the earth, the quantity of
in the sun, must far exceed the whole
f matter in all the planets; and to sup-
at gravity retains all the other planets in
rbits, without affecting the earth, would
bsurd as to suppose, that six cannon bul-
ght be projected up to different heights in
, and that five of them should fall to the
d, but that the sixth, though neither the
st nor the lowest, should remain suspended
ir without falling, and the earth move
it.

There is no such thing in nature as a
body moving round a light one as its cen-
motion. A pebble fastened to a mill-stone
ning, may, by an easy impulse, be made
ulate round the mill-stone: but no impulse
ake a mill-stone circulate round a loose
; for the mill-stone would go off, and
the pebble along with it. The sun is so
much bigger and heavier than the earth,
f he were moved out of his place, not only
rth, but all the other planets, if they were
into one mass, would be carried along with
the pebble would be with the mill-stone.

II. If the earth revolve round the sun,
he analogy between the squares of the
ic times and the cubes of the distances,
btain in all the bodies which circulate
a common centre; whereas, this will not
case with respect to the sun and moon, if
urn round the earth.

III. Besides these, other proofs might be
; but the most complete proof of all, and
indeed amounts to a demonstration is, the
tion of the fixed stars, arising from the
ssive motion of light, combined with the
annual motion round the sun: a discovery
by Dr. Bradley, and one of the finest in
n astronomy.

By frequent observations of the eclipses
piter's satellites, it is found, that light is
eight minutes in moving from the sun to
rth. And since the earth describes about one degree, or 3600″, in a day, or 1440′, in eight minutes it will describe 20·25″ in its orbit; therefore the velocity of light is to the velocity of the earth in its orbit, as radius to an arch of twenty seconds, or the third part of a minute, that is, as one to $\frac{\cdot 0002909}{3}$ or ·00009697, or as 10300 to one. That is, the velocity of light is 10300 times greater than the velocity of the earth in its orbit. Now if A N, plate VIII. fig. 15, be the way or path of a body in free space, as of a ray of light; its apparent way on a movable plane will be different. For it will be that which is made by the composition of the two motions of the body and plane. Thus, if A N be described in any time by the body, and N F be described by (a point in) the plane, in the same time as the plane moves forward in the direction N F or A B, it leaves all the points of the fixed line A N behind it, all which will therefore seem to move backwards in the plane Therefore make N D=N F, being taken backwards or contrary to the motion of the plane; and the body, instead of going to N in the free space, will seem to go to D, in the same time, upon the movable plane; and therefore A D will be the apparent path of the body in that plane.

375. It will be the same thing, if we suppose the plane fixed, and the body to have the plane's motion communicated to it, in a contrary direction, so as the relative motion be the same as before. Thus, if the body moves from B to A, in the same time that it would also move from A to N, then by that compound motion it would move along the diagonal B N of the parallelogram whose sides are B A, A N, and in the same time. Therefore rays of light emitted from a star in the direction A N, will fall upon the point D of the moving plane; that is, upon the eye of the observer, in the direction A D: and an observer at D will suppose the star situated in the line D A. If B N be parallel to A D, and the point D translated to N in the same time; an observer at N will suppose the star situated in the line B N; making the angle B N F or A D F less than A N F, the angle it would appear under if the plane were at rest. So that the angle of elevation B N F, above the line of direction N E, of the observer, is less than before, being taken on the side of F, towards which the observer moves. The observer, instead of seeing the star at A, its real place, will see it at B, its apparent place; but if the observer moves from F to N and D, and B be the real place of the star, its apparent place would be at A to an observer at N.

376. The apparent place B is always in the plane of aberration, drawn through the way of the observer N F, and the line N A drawn from the observer to the real place of the star; for A B being parallel to N F, is in the plane A D N F. The angle B N A or N A D is the angle of aberration; by the quantity of this angle the star is depressed, in going towards it; or raised in going from it. In the triangle A N D; A N : N D :: S.A D N : S.N A D; and A N and N D being given; the S.N A D the aberration will be as the S.A D N. Because A N is 10,300 times greater than N D: the S.N A D does not differ from its arch or angle; whence, the angle of aberration N A D or A N B is always as the sine of the angle

ADN, or ANF, which are nearly equal, and which may be called the angle of the earth's way. Hence the angle of aberration ANB is greatest, when AN is perpendicular to ND; and becomes nothing when ANF is nothing. Since AN is to ND, as radius to 20″; when AN is perpendicular to ND, the angle NAD or ANB will be 20·25″, which is the greatest it can be. In other cases, as radius to S, angle of the earth's way ANF :: so 20·25″, to the aberration, answering to that angle; which angle is always taken in the plane of aberration ADNF.

377. In Plate VIII. fig. 7, let BCDE be the earth's orbit, S the sun, A or Q a star, N any place of the earth in its orbit. Through the star A draw the circle AH perpendicular to the plane of the ecliptic, and draw KSBH, and ESC perpendicular to it, or parallel to the tangent at B. Draw the tangent N*d*, and draw NI towards the star, and make NI to N*d* as the velocity of light to that of the earth, or as 10,300 to one, and draw *d* I which leads to the apparent place of the star; and suppose DA, SA parallel to *d*I, NI; then DA will also lead to the apparent place of the star. Draw SFG perpendicular to SN, or parallel to N*d*. Then will IN*d* be the plane of aberration. This plane continually changes its situation, revolving round the sun in a year along with the tangent N*d*. Since AS, SF are parallel to IN, N*f*, ASF is equal to IN*f*, and ASF is equal to the angle of the earth's way. Hence the plane ASF may be taken for the plane of aberration, which continually turns round the line AS, as the earth revolves about the sun; the line SF being always in quadrature with the earth at N.

378. Let the earth be at E, then the plane of aberration ASB will be perpendicular to the ecliptic; and the angle of the earth's way A'S B is the least that it can be, and the angle of the aberration the least. Whilst the earth moves to B, the angle of the earth's way, and of aberration increases, and at B the plane of aberration is ACS, and the angle of the earth's way ASC, a right angle, which is the greatest it can be; therefore the angle of aberration is the greatest possible. While the earth moves to C, the angles of the earth's way and aberration decrease again, and at C are the least; and in morin
K they increase again to K, where they are g
est. From K to E they diminish again, w
they are least.

379. It is evident then, that whilst the
is at E moving towards N, the star's app
place is at *c* lower than A; at B moving to
F, it appears at *b* forward. When the earth
C, the star appears at *c* above A. And whe
earth is at K, the star is seen at *k*, having
backward. Hence the apparent place of a
describes a small ellipsis in a year, abou
true place of the star in its centre, whose t
verse axis is parallel to the ecliptic; and
axis perpendicular to it. This ellipsis is
answering to places of the earth at B, C, K
And the points *k*, *c*, *k*, *e*, answer respective
the points C, K, E, B, where the plane of
ration cuts the ecliptic, being ninety de
before the earth, or ninety degrees behind the

380. This phenomenon, the apparent ch
of place in celestial objects, arising from the
bined motions of the earth and the light
those objects, is one of the most curious and
portant discoveries of modern times. W
indebted for it to Bradley, who, as has been
observed, 'swept the ground of astrono
discovery, and left little to be gathered by
that followed him.'

381. The following formulæ represent the
of aberration on any fixed stars, both in righ
cension and declination, μ representing 20·2
quantity found above for the maximum eff
aberration, α and δ the right ascension and d
nation of the star, ω the obliquity of the ecl
and $\odot$ the sun's longitude.

Aberration in right ascension $= -\mu.$

$\{\sin. \odot \sin. \alpha + \cos. \odot \cos \alpha \cos \omega \sec.$

Aberration in declination $= -\mu.$

$\{\sin. \odot \cos. \alpha \,.\, \sin. \delta - \cos. \odot (\sin. \alpha \,.\, \text{co}$
$\sin. \delta - \sin. \omega \cos. \delta.)\}$

By the following tables, deduced from
formulæ, the effect of the aberration on the
ascension and declination of any fixed star
readily be computed.

382. TABLE I.

ARGUMENT. For Aber. in R. A. ✱' R.A. — ⊙' long. For Aber. in Declin. ✱' R. A. + 90° — ⊙' long.				
	Signs.			
	O. VI.	I. VII.	II. VIII.	
	— +	— +	— +	
0°	19·17″	16·60″	9·59″	30°
5	19·10	15·71	8·10	25
10	18.88	14·69	6·56	20
15	18·52	13·56	4·96	15
20	18·02	12·32	3·33	10
25	17·38	11·00	1·67	5
30	16·60	9.59	0·00	0
	— +	— +	— +	
	XI. V.	X. IV.	IX. III.	

383. TABLE II.

ARGUMENT. For Aber. in R. A. ✱. R. A. + ⊙. long. For Aber. in Declin. ✱' R. A. + 30° + ⊙' long.			
	Signs.		
	O. VI.	I. VII.	II VIII.
	+ —	+ —	+ —
0°	0·83″	0·72″	0·41″
5	0·82	0·67	0·35
10	0·82	0·63	0·28
15	0·80	0·58	0·22
20	0·78	0·53	0·14
25	0·75	0·47	0·07
30	0·72	0·41	0·00
	+ —	+ —	+ —
	XI. V.	X. IV.	IX. III.

384. TABLE III.

ARGUMENT.

For part 2d of Aber. in Declin.
☉• long. + ✳• Declin.
For part 3d of Aber. in Declin.
☉• Long. — ✳• Declin.

Signs.

VI.	I. VII.	II. VIII.	
— +	— +	— +	
3·98″	3·45″	1·99″	30°
3·97	3·26	1·68	25
3·92	3·05	1·36	20
3·85	2·82	1·03	15
3·74	2·56	0·69	10
3·61	2·28	0·35	5
3·45	1·99	0·00	0
— +	— +	— +	
XI. V.	X. IV.	IX. III.	

To find from these tables the aberration
at right ascension.—To the logarithms of
or difference of the equations from
and II, answering to the proper argu-
add the longitude east of the star's de-
, and the sum will be the logarithms of
tion in right ascension.

To find the aberration of a star in decli-
—Find the sum or difference of the equa-
ering to the former arguments, in-
by 90°, to the logarithm of which add
sine of the star's declination, and the
be the logarithm of the first part of the
. Take parts second and third from
, and these applied to the former, will
aberration in declination. If the de-
is south, change the sign of parts 2d

The strongest objection that can be made
he earth's moving round the sun like the
nets, is, that, in opposite points of the
rbit, its axis, which always keeps a paral-
tion, would point to different fixed stars;
not found to be fact. But this objec-
asily removed, by considering the im-
istance of the stars in respect of the dia-
f the earth's orbit; the latter being no
n a point when compared to the former.
y a ruler on the side of a table, and along
of the ruler view the top of a spire at
s distance; then lay the ruler on the op-
ide of the table in a parallel situation to
had before, and the spire will still appear
e edge of the ruler; because our eyes,
en assisted by the best instruments, are
le of distinguishing so small a change
at a distance. As the apparent places
tars, therefore, correspond with this the-
motion of the earth and the motion of
both determined.

In fact, we find that the sun, and those
on which there are visible spots, turn
heir axes: for the spots in general move regularly over their disks, allowing for the variations already taken notice of. Hence we may reasonably conclude, that the other planets, on which we see no spots, and the earth, which is likewise a planet, have such rotations. But being incapable of leaving the earth to view it at a distance, and its rotation being smooth and uniform, we can neither see it move on its axis, as we do the planets, nor feel ourselves affected by its motion. Yet there is one effect of such motion, which will enable us to judge with certainty whether the earth revolves on its axis or not.

389. All globes which do not turn round their axes, will be perfect spheres, on account of the equality of the weight of bodies on their surfaces; especially of the fluid parts. But all globes, which turn on their axes will be oblate spheroides; that is, their surfaces will be higher or farther from the centre in the equatorial than in the polar regions: for, as the equatorial parts move quickest, they will recede farthest from the axis of motion, and enlarge the equatorial diameter. That our earth is really of this figure, is demonstrable from the unequal vibrations of a pendulum, and the unequal lengths of degrees in different latitudes. Since then, the earth is higher at the equator than at the poles, the sea, which naturally runs downward, or towards the places which are nearest the centre, would run towards the polar regions, and leave the equatorial parts dry, if the centrifugal force of these parts, by which the waters were carried thither, did not keep them from returning. The earth's equatorial diameter is thirty six-miles longer than its axis.

390. One phenomenon, called the precession of the Equinoxes, depending on this peculiarity of form in the figure of the earth, has been noticed from the early ages of astronomy. The pole of the celestial equator appears to move with a slow and nearly uniform motion round the pole of the ecliptic; while the intersections of the equator and ecliptic move backward on the ecliptic, with a motion nearly uniform. This motion is at the rate of about 1° in seventy-two years, or more accurately 50·2″ in a year; consequently the sun returns again to the same equinoctial point before he has completed his revolution in the ecliptic, whence the origin of the term precession of the equinoxes. In consequence of this apparent motion all the fixed stars increase their longitude 50·2″ in a year, and also change their right ascensions and declinations, but their latitudes are not affected. The period of the revolution of the celestial equinoctial pole, round the pole of the ecliptic, is nearly 26,000 years.

391. The north celestial pole therefore, about 13,000 years hence, will be nearly 49° from the present polar star; and about 10000 years hence the bright star α, Syrac, will be within 5° of the north pole. This star therefore, which now in these latitudes passes the meridian within a few degrees of the zenith, will then remain nearly stationary with respect to the horizon. This motion of the celestial pole arises from the attraction of the sun and moon on the excess of matter at the equatorial parts of the earth.

392. The precession of the equinoxes is not entirely uniform, for a small inequality in the precession, and change in the obliquity of the ecliptic, depends on the position of the moon's nodes. The intersections of its orbit with the ecliptic were discovered by Bradley, and have since been confirmed by Physical Astronomy. The precession of the equinoxes was first discovered by Hipparchus. As the quantity of it is so perceptible in a hundred years, a comparison of the positions of the circles of the sphere as recorded in early times, and of their positions now, has been used to assist chronology.

393. Even the inclination of the equator and ecliptic have been shown by observation to be variable, and it is remarkable that from the date of the earliest observations that inclination has been diminishing. If it should continue to do so till the two circles coincided, a most important change would be effected in the phenomenon attending the earth's annual and diurnal revolutions, as the days would everywhere be of the same length, and the seasons would not alter with the times of the year. But we learn from the principles of physical astronomy, that this change in the obliquity will never exceed a certain limit, which when it reaches, it will return again, oscillating by a small quantity on each side of its mean state. We learn from physical astronomy too, that by this action the ecliptic is progressive on the equator, about 14″ in a century. The sun also according to his place in the ecliptic produces a small inequality in the precession, never amounting to more than 1·1″.

394. If $d =$ the declination of a star, and $a =$ its right ascension, then the following formulæ will express nearly the annual variations of a and b, arising from precession: 20·084″ × cos. $a =$ the annual precession in declination, and 46·0619 + 20·084″ × sin. a × tan. $d =$ the annual precession in right ascension.

395. From these expressions, the following table has been constructed for determining, by inspection, the annual precession for any star.

Rt. Ascension of *		Ann. Precession.	Rt. Ascension of *	
+	−		+	−
0°	180°	·70″	180°	360°
10	190	3·47	170	350
20	200	6·84	160	340
30	210	10·00	150	330
40	220	12·85	140	320
50	230	15·31	130	310
60	240	17·31	120	300
70	250	18·78	110	290
80	260	19·69	100	280
90	270	19·99	90	270

USE OF THE ABOVE TABLES.

396. Take the number opposite the star's right ascension, multiply it by the natural tangent of the star's declination, and add the product to 46·0619 for the annual precession in right ascension. Again add 90° to the st
ascension, and with the sum as an
enter the table, and the correspondin
will be the annual precession in de
If the declination is south, the sign
numbers in the table must be changed
finding the precession or right ascen
declination.

397. It is found that bodies near the
heavier than those towards the equator
they are nearer the earth's centre, where
force of the earth's attraction is accu
They are also heavier, because their c
force is less, on account of their diurn
being slower. For both these reasons, b
ried from the poles towards the equator
lose their weight. Experiments prov
pendulum, which vibrates seconds near
vibrates slower near the equator, whi
that it is lighter or less attracted there.
it oscillate in the same time, it is found
to diminish its length. By comparing the
lengths of peudulums swinging second
equator and at London, it is found that
lum must be $2\frac{169}{1000}$ lines (or 12th parts of
shorter at the equator than at the poles.

398. A person on the earth can no
sensible of its undisturbed motion on its
one in the cabin of a ship on smooth wa
sensible of the ship's motion, when it tur
and uniformly round. It is therefore
ment against the earth's diurnal motion
do not feel it; nor are the apparent re
of the celestial bodies every day, a pro
reality of these motions; for whether we
revolve, the appearance is the very same
son looking through the cabin windows
as strongly fancies the objects on land to
when the ship turns, as if they actually

399. The other common objections ag
earth's motion on its axis, are easily a
Some imagine, that if the earth turns e
as it certainly does if it turns at all, a
perpendicularly upward in the air sh
considerably westward of the place it
jected from. This objection will be foun
no weight, if we consider that the gun
partake of the earth's motion; and ther
ball being carried forward with the air
as the earth and air turn, must fall dow
same place. A stone let fall from the
main-mast, if it meets with no obstacle,
the deck as near the foot of the mast
ship sails as when it does not.

400. As for those scriptural expressio
seem to contradict the earth's motion, t
ral answer may be made to them all,
scriptures were never intended to instr
philosophy or astronomy; and therefore,
subjects, expressions are not always to
in the literal sense, but for the most pa
commodated to the common appreher
mankind. Men of sense in all ages, w
treating of the sciences purposely, h
common language; and it would be a
adopt any other in addressing the ma
mankind.

401. We have said above, that the ax
earth preserves always the same parallel

ust be understood with a slight limita- dley found that the axis of the earth rt of conical revolution round the mean he pole, the earth's centre being the e cone, and the diameter of the base '. With that admirable sagacity for was not less remarkable than for his and faithfulness as an observer, he ed this most curious phenomena to its ich is the action of the sun and moon, of the equator, and the protuberant parts of the earth. This correction, alled the Nutation of the earth's axis, gh all its variations with respect to the bout eighteen years, the period of the of the moon's nodes, and with respect in a year; but the maximum effect 's action nearly amounts to half a se-

strictness, however, the curve of nu- not a circle but an ellipse, whose axes to the best observations, are about 18″ ″. If ☊ denote the longitude of the ode, r the right ascension of a star or d d its declination; then the effect of nutation on the right ascension and de- will be expressed by the following for- the nutation and declination:

x sin. $\overline{r - ☊}$ + 1·15″ × sin $\overline{r + ☊}$
utation in right ascension. = (7·85″ ×
$\overline{☊ - 90^\circ}$ + 1·15″ sin. $\overline{r + ☊ - 90^\circ}$)
-15·43″ sin ☊.

From these expressions, the following e been computed for finding the effect r nutation on the right ascension and n of any celestial object:

404. TABLE I.

ARGUMENT.

For Nutation in Right Ascension.

$\overline{r - ☊}$

For Nutation in Declination.

$\overline{r + 90^\circ - ☊}$

Signs.

0. VI.	I. VII.	II. VIII.	
− +	− +	− +	
8·33″	7·21″	4·16″	30°
8·30	6·82	3·52	25
8·20	6·38	2·85	20
8·05	5·89	2·15	15
7·83	5·35	1·45	10
7·55	4·78	0·73	5
7·21	4·16	0·00	0
− +	− +	− +	
XI. V.	X. IV.	IX. III.	

III.

405. TABLE II.

ARGUMENT.

For Nutation in Right Ascension.

$\overline{r - ☊}$

For Nutation in Declination.

$\overline{r + 90^\circ + ☊}$

Signs.

	O. VI.	I. VII.	II. VIII.	
	− +	− +	− +	
0°	1·22″	1·06″	0·61″	30°
5	1·21	1·00	0·52	25
10	1·20	0·93	0·42	20
15	1·18	0·86	0·32	15
20	1·15	0·78	0·21	10
25	1·11	0·70	0·11	5
30	1·06	0·61	0·00	0
	− +	− +	− +	
	XI. V.	X. IV.	IX. III.	

406. TABLE III.

Equation of Equinoxes in Right Ascension.

ARGUMENT.

☊

Signs.

	O. VI.	I. VII.	II. VIII.	
	− +	− +	− +	
0°	0·0″	8·2″	14·2″	30°
5	1·4	9·4	14·8	25
10	2·8	10·5	15·4	20
15	4·2	11·6	15·8	15
20	5·6	12·5	16·1	10
25	6·9	13·4	16·3	5
30	8·2	14·2	16·2	0
	+ 1	+ 1	+ 1	
	XI. V.	X. IV.	IX. III.	

USE OF THE ABOVE TABLES.

407. To the logarithm of the sum or difference of the equations from tables I. and II., answering to their proper arguments, add the logarithm tangent of the star's declination, and the sum will be the logarithm of part first of the nutation, or right ascension if the declination is north. If it is south, change the sign and apply the equation from table III., and the sum or difference will be the nutation or right ascension. Increase the arguments in tables I. and II. each

by 90°, and the sum or difference of the corresponding difference of the equations taken from those tables, will be the nutation or declination.

408. The annual motion of the earth has been effectually confirmed by an argument drawn from the progressive motion of light; and from the same consideration the truth of the diurnal motion may be completely established.

409. In consequence of the progressive motion of light, the apparent place of a fixed star is east of its true place, and the difference is proportional to the cosine of the star's declination; this displacement of the fixed stars has changed, because of the precession of the equinoctial points. Therefore, if the diurnal revolution of the heavens were a real motion, the whole heavens must have changed their appearance; and the respective positions of the stars must be very different now, from what they were in the time of Hipparchus. A star which is now near the vernal equinox, must have changed its apparent distance, at least 5° from another ecliptical star which is 60° east from it. Nay, it is highly probable that no zodiacal star could be ever visible; such would have been the direction that the rays of light must have taken, because of their own proper motion being compounded with that of the star, whose velocity must have been exceedingly great, by reason of its distance from the poles of the motion. But since no such remarkable displacement of the stars has been observed, we may conclude, that the cause which would have produced it, has no existence; and that the revolutions of the heavens is not a real, but only an apparent motion.

410. The annual and diurnal motions of the earth, together with the different lengths of days and nights, and all the beautiful variety of seasons, depending on those motions, may be thus illustrated.

411. In plate X, fig. 5. let F G H I be the earth, O its centre; and let it revolve about an axis perpendicular to the plane of the figure, in the order I F G H; that is, from west to east. Let A be the sun, draw A F O H C, and G O I perpendicular to it: let a spectator be at I; then since the tangent at I (which represents the horizon) will be parallel to A F H, and A at an immense distance, they will nearly meet in A, and the sun at A will be rising in the horizon at I. As the earth moves round, the spectator is carried towards F, and the sun at A seems to rise higher and higher; and when the spectator is arrived at F, then the sun is at the highest. As the earth still turns round, and the spectator is carried from F towards G, the sun appears to descend, as if it moved towards D; and when the spectator is arrived at G, then the sun appears in the tangent at G; that is, in the horizon at G; and therefore the sun is setting. Afterwards, all the time the spectator is moved through G H I, the sun appears under the horizon, till it comes at I, where the sun seems to rise again.

412. Thus it is evident, that while the spectator is carried through the illuminated half of the earth I F G, it is day light; at the middle point F, it is noon day; at the dark hemisphere G H I, it is night; and at H, it is midnight. And thus the vicissitude of day and night appears, by the rotation of the earth about its axis. What has been said of the sun is equally true of the moon, or any star placed at A. And therefore all the celestial bodies seem to rise and set by turns, one after another, according to their various situations. For let A, B, C, D be four stars; when the spectator is at I, the star A rises; and when at G, it sets. When the spectator is at F, B rises; and when he is at H, it sets. When he is at G, C rises; and when at I, it sets. When the spectator is at H, D rises; and when at F, it sets.

413. Hence it is the very same thing, as to the diurnal motions, whether the earth moves uniformly about its axis, while the heavens stand still; or whether the heavens move uniformly round, while the earth stands still; the phenomena being exactly the same either way. For whether the spectator move uniformly in the arch I F, from west to east, whilst A is fixed; or A moves uniformly in the arch A D, from east to west, whilst I is fixed; the same angle will be described, and therefore the altitude of A, above the horizon, will be the same either way.

SECT. III.—OF THE SEASONS.

414. To explain the causes of the various seasons in plate VII. fig. 10, let ♈ ♋ ♎ ♑ be the earth's orbit, and S the sun. This orbit is so small with respect to the distance of the fixed stars, that the same aspect of the heavens will appear, whether a man be placed in the earth or in the sun. If the earth be at ♈, a spectator will see the sun in ♎; when the earth comes to ♉, he will see the sun in ♏; and the sun will appear to have moved through ♎ ♏. Whilst the earth is moving to ♊, the sun will seem to pass through ♏ ♐; and a person in the earth observes the sun to go through the same space in the heavens, that a spectator at the sun would see the earth go through; and as he is not sensible of the earth's motion, he ascribes that motion to the sun, which in reality is unmoved. Hence, because the relative motion is the same, whether of the two is moved, and all effects are the same as to their places; astronomers generally suppose the sun to move along the ecliptic, describing its orbit round the earth at rest.

415. Let N E A Q be the earth, N A be its axis, N the north pole, A the south; E Q the equinoctial, and P R a parallel of latitude passing through any place. Draw a plane G ♈ I perpendicular to ♑ S ♋, which divides the illuminated hemisphere from the dark one. The axis N A is inclined to the plane of the ecliptic or earth's orbit, in an angle of 66½°: and during the earth's motion in its orbit, the axis always remains in a parallel position, or pointing to the same star. The earth also moves uniformly round this axis; and describes equal arches in equal times. Now let the earth be at ♎; in this position, the circle dividing the light and dark hemispheres passes through the poles N and A, and divides all the parallels as P R into two equal parts; therefore any point in that parallel, as the earth revolves round, will stay as long in the light hemisphere as in the dark; that is, the days and nights are equal. As it moves to ♏, the pole N comes into the light hemisphere, by reason of the oblique position of the axis N A; and as it proceeds to ♐ and ♑, the light hemis

phere reaches farther and farther beyond N, till coming to ♑, it is at the farthest, reaching to G, and making the arch N G 23½° the complement of N ♑ S, or 66½°. Then the opposite pole A was far involved in the dark hemisphere; whence in north latitudes, or in the hemisphere E N Q, the days have been increasing from ♎ to ♑, where they are at their longest; for the greater part of the parallel P R is in the illuminated hemisphere, and the smaller part in the dark.

416. In the opposite or southern hemisphere the days have been decreasing, and are at their shortest when the earth is at ♑: for all parallels to E Q have their greater part in the dark hemisphere. If through the point G a parallel be described, this parallel is called the arctic circle; and all the space contained therein is illuminated, and there is no night, when the earth is at ♑. For the same reason, the space within a parallel drawn through I, will be all dark, and all is night there. If a parallel be drawn through B, where S ♑ cuts the arch N E, that parallel is called the tropic of Cancer; and then the sun will shine perpendicular upon the inhabitants in that parallel. This is the summer season for those that are in the hemisphere E N Q, and the winter for those that live in E A Q; and since E Q is equally divided by the circle of light and darkness G I, the days and nights are always equal under the equinoctial.

417. While the earth moves through ♒ and ♓ to ♈, the circle of light and darkness comes nearer and nearer to the pole N, the angle N ♑ G, and consequently B ♑ E grows less and less, till they vanish in ♈; then the circle of light and darkness passes again through the poles N and A, bisecting all the parallels as P R; and the days and nights are again equal all over the earth.

418. While the earth moves through ♈, ♉, ♊, to ♋, the sun seems to go through ♎, ♏, ♐, to ♑; and the circle separating light and darkness falls short more and more of the north pole N, and goes further and further beyond the south pole A; whence the parallels cut by that circle will have the greater part in the dark in the north hemisphere; but in the south hemisphere, the greater part will be in the light: and it is winter in the northern hemisphere E N Q, the days being at the shortest; and summer to the southern hemisphere E A Q, their days being at the longest. Within the parallel drawn through G, there will be no day whilst the earth is at ♋; and in the parallel drawn through I, there will be no night. At the pole A it will be day for six months, and at the pole N it will be night for six months; just the contrary of what happens when the earth is at ♑. In this position, if a parallel be drawn through B, the sun will shine perpendicular to the earth in that parallel, and it is called the tropic of Capricorn; and a parallel drawn through I is called the antarctic circle.

419. When the earth moves from ♋ through ♌ and ♍ to ♎ again; it is evident the circle separating light and darkness draws nearer and nearer to the poles N and A, by which the light and dark parts of the parallels become nearer an equality, and so to the days and nights. Therefore in the north hemisphere E N Q, the days are increasing; and in the south hemisphere they are decreasing: and the days and nights become equal in every place, when the earth arrives at ♎.

420. In this manner are the several seasons caused, being owing to the obliquity of the axis of rotation of the earth, to the plane of the earth's orbit. But if the axis was perpendicular to it, there could be no variety in the length of days in whatever part of the orbit the earth was; and all seasons would be alike. Thus the obliquity of the earth's axis to the ecliptic, or which is the same thing, of the equinoctial to the ecliptic; is the cause of the different seasons, summer, winter, spring, and autumn, during the year. Without this, there could be no difference of seasons; and consequently it could not be easy to know the length of the year, without observations of the stars. For the length of the year is known from finding the time by observation, when the sun is in the equinoctial points; and there being no such points to observe by, there could be no method but to observe by the position of the stars, when the same star was again in opposition to the sun, which none but an astronomer could do.

421. The sun appears 47° higher in the summer tropic than it does in the winter tropic; for in summer it seems to have ascended through the arch B E; and in winter to have descended through the arch B Q equal to B E; and their sum is 47°.

422. All these phenomena may be thus represented: Take a small globe that has the equinoctial and parallels drawn on it; and, placing a candle upon a table, move the globe round the candle in a circle parallel to the table, so that the axis of the equator may be oblique to that circle, and be kept always in a parallel position whilst it moves about The candle will illuminate the globe as it is carried round, just as the sun does the earth in its orbit; and the poles and the parallels will be the same way affected with light and darkness as the globe.

423. The orbit of the earth being elliptical, and the sun constantly keeping in its lower focus, which is 1,617,941 miles from the middle point of the longer axis, the earth approaches twice as near, or 3,235,882 miles nearer the sun at one time of the year than at another; for the sun appearing under a larger angle in our winter than summer, proves that the earth is nearer the sun in winter. But here this question naturally arises, Why have we not the hottest weather when the earth is nearest the sun? In answer it must be observed, that the eccentricity of the earth's orbit, or 1,617,941 miles, bears no greater proportion to the earth's mean distance from the sun, than seventeen does to 1000; and therefore this small difference of distance cannot occasion any great difference of heat or cold.

424. But the principal cause of this difference is, that in winter the sun's rays fall so obliquely upon us, that any given number of them is spread over a much greater portion of the earth's surface where we live; and each point must then have fewer rays than in summer. There comes also a greater degree of cold in the long winter nights than there can return of heat in so short days; and on both these accounts the cold must increase. In summer the rays fall more perpendicularly upon us; come with greater force, and

in greater numbers, on the same place; and by their long continuance, a much greater degree of heat is imparted by day than can fly off by night.

425. Besides, those parts which are once heated, retain the heat for some time; which, with the additional heat daily imparted, makes it continue to increase though the sun declines towards the south. This is the reason why July is hotter than June; and often, in our cold climate, August hotter than both, although the sun has withdrawn from the summer tropic; as we find it is generally hotter at three in the afternoon, when the sun has gone towards the west, than at noon when he is in the meridian. Those places too which have been well cooled require time to be heated again; for the sun's rays do not heat even the surface of any body, till they have been some time upon it. Hence we find January for the most part colder than December, although the sun has withdrawn from the winter tropic, and begins to dart his beams more perpendicularly upon us. An iron bar is not heated immediately upon being put into the fire, nor grows cold till some time after it has been taken out.

426. If we suppose the degree of heat to be as mth power of the sun's altitude, into the nth power of the time of his continuance above the horizon, that s and c are the sine and cosine of any given latitude; s' and c' the sine and cosine of the sun's declination at the semidiurnal one; T the time in the afternoon, when the heat is the greatest; and x and y the sine and cosine of T. Then $cc' + ss'y$ will be the sine of the sun's altitude; and consequently $(cc' + ssy')^m + \overline{A+T}^n$ must be a maximum; whence its fluxion $mss\dot{y} \times \overline{A+T} + n\dot{T} + (ss' + ssy') = 0$. But by the property of the circle $\frac{\dot{y}}{x} = \dot{T}$, and consequently $\overline{A+T} - x - \frac{ny}{m} = \frac{ncc'}{mss'}$; an equation from whence the relation between x and y may be determined.

427. The sun completes what is called a tropical year, when he arrives at the same equinoctial or solstitial point. This he does in 365d. 5h. 48′ 57″. When he arrives at the same fixed star again, as seen from the earth, he completes the siderial year, which contains 365d. 6h. 9′. 14½″. The siderial year is therefore 20′ 17½″ longer than the solar or tropical year, and 9′ 14½″ longer than the Julian or the civil year, which we state at 365d. 6h.; so that the civil year is almost a mean between the siderial and tropical.

428. As the sun describes the whole ecliptic, or 360°, in a tropical year, he moves 59′ 8″ of a degree every day at a mean rate; and consequently 50″ of a degree in 20′ 17½″ of time; therefore he will arrive at the same equinox or solstice, when he is 50″ of a degree short of the same star, or fixed point in the heavens, from which he set out the year before. So that, with respect to the fixed stars, the sun and equinoctial points fall back, as it were, 30° in 2160 years, which will make the stars appear to have gone 30° forward with respect to the signs of the ecliptic in that time: for the same signs always k
in the same points of the ecliptic without reg
to the constellations.

429. The sun returns to the equinox again
365d. 5h. 48′ and 57″; and this is the peri
in which the seasons complete their revoluti
But as it is convenient in civil life to make
year consist of an exact number of days, th
years in succession are made to consist of 3
days, and a fourth of 366 days; making the ave
age length of a civil year to be 365d. 6h. or 1
3″ too little.

430. These 11′ 3″, by which the civil or Juli
year exceeds the solar, amount to 11 days
1433 years; and so much our seasons had fall
back, with respect to the days of the month
since the time of the Nicene council in A.
325. In order, therefore, to bring back all
fasts and festivals to the days then settled, it w
requisite to suppress 11 nominal days; an
that the same seasons might be kept to the sa
times of the year in future, to leave out the bi
sextile day in February, at the end of every ce
tury of years not divisible by 4; to reckon the
only common years; as the 17th, 18th, and 19
centuries, viz. the years 1700, 1800, 1900, &
because a day intercalated every fourth year w
too much; and to retain the bissextile day at t
end of those centuries of years which are divisib
by 4, as the 16th, 20th, and 24th centuries, vi
the years 1600, 2000, 2400, &c.

431. Without these changes, the seasons
length of time would be quite reversed with r
gard to the months of the year; though it woul
have required near 23,783 years, to have brough
about such a total change. If the earth had mad
exactly 365¼ diurnal rotations on its axis, whi
it revolved from any equinoctial or solstiti
point to the same again, the civil and solar yea
would always have kept pace together and t
style would never have needed any alteration.

SECT. IV. OF THE PHENOMENA OF THE MOO

432. The moon is not a primary planet, b
only a satellite, or attendant of the earth, circ
lating around it in 29d. 12h. and 44′, and roun
the sun along with it every year. The moon
diameter is 2180 miles; and her distance fro
the earth's centre about 240,000 miles. She go
round her orbit in 27d. 7h. 43′. moving abou
2290 miles every hour; and turns round h
axis exactly in the same time that she goes roun
the earth, which is the reason of her keeping al
ways the same side towards us, and that her da
and night taken together is as long as our luna
month.

433. The moon is an opaque globe like th
earth, and shines only by reflecting the light o
the sun; therefore, whilst that half of her whic
is towards the sun is enlightened, the other ha
must be dark and invisible. Hence she disap
pears when she comes between us and the su
because her dark side is then towards us. Wh
she is gone a little way forward, we see a litt
of her enlightened side; which increases to o
view as she advances, until she comes to be o
posite to the sun; when her whole enlighten
side is towards the earth, and she appears
round illuminated orb, which we call the fu

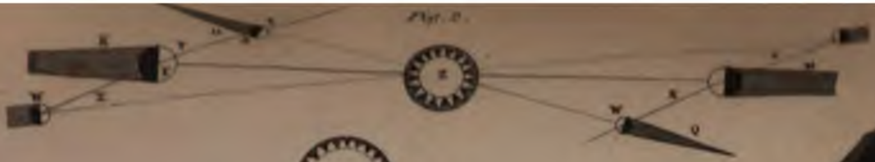


Fig. 2.

Face of the Moon

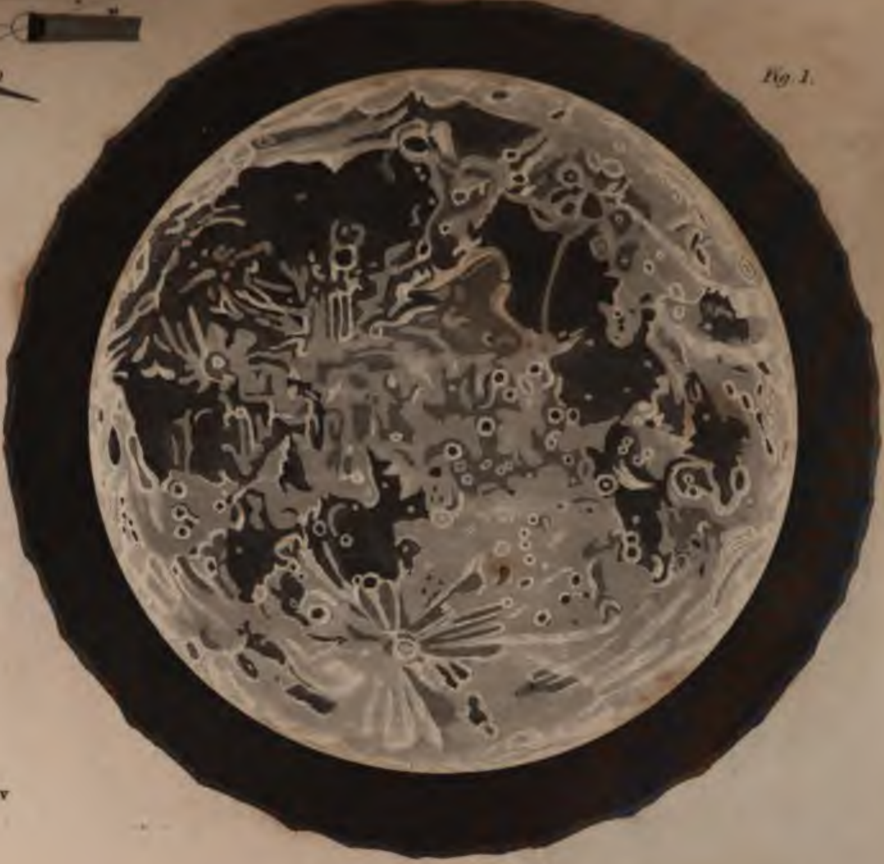


Fig. 1.

Fig. 3.

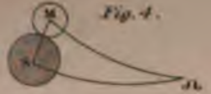


Fig. 4.

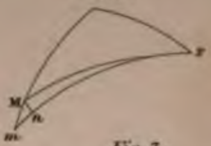
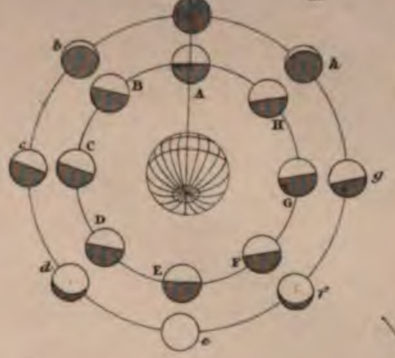


Fig. 5.

Phases of the Moon



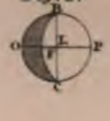


Fig. 6.

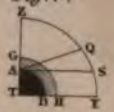


Fig. 7.

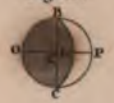


Fig. 8.

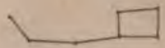


Fig. 9.

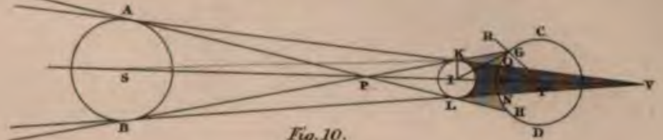


Fig. 10.

London. Published by Thomas Tegg. 73. Cheapside

J. Shury Sculp.

moon; her dark side being then turned away from the earth. From the full she seems to decrease gradually as she goes through the other half of her course; showing us less and less of her enlightened side every day, till her next change or conjunction with the sun, when she disappears as before.

434. The moon has scarcely any difference of seasons; her axis being almost perpendicular to the ecliptic. What is very singular, one half of her has no darkness at all; the earth constantly affording it a strong light in the sun's absence; while the other half has a fortnight's darkness and a fortnight's light by turns.

435. Our earth appears as a moon to the inhabitants of the moon; waxing and waning regularly, but appearing thirteen times as big, and affording them thirteen times as much light as she does to us. When she changes to us, the earth appears full to her; and when she is in her first quarter to us, the earth is in its third quarter to her; and vice versa. But from one half of the moon the earth is never seen at all: from the middle of the other half it is always seen over head; turning round almost thirty times as quick as the moon does. From the circle which limits our view of the moon, only one half of the earth's side next her is seen; the other half being hid below the horizon of all places on that circle. To her inhabitants the earth appears the largest body in the universe; for it appears thirteen times as large as she does to us.

436. While the earth turns round its axis, the several continents, seas and islands, appear to the moon's inhabitants like so many spots of different forms and brightness, moving over its surface; being fainter at some times than others, according as our clouds cover them. By these spots the Lunarians can determine the time of the earth's diurnal motion, just as we do the motion of the sun: and they may measure their time by the motion of the earth's spots, for they cannot have a more true dial.

437. The axis of the moon is so nearly perpendicular to the ecliptic, that the sun never removes sensibly from her equator; and the obliquity of her orbit, which is next to nothing as seen from the sun, cannot cause the sun to decline sensibly from her equator. Yet her inhabitants are not destitute of means for ascertaining the length of their year, though their method must differ from ours. We know the length of our year by the return of our equinoxes; but the Lunarians, having always equal day and night, must have recourse to another method; and, we may suppose, they measure their year by observing when either of the poles of our earth begins to be enlightened, and the other to disappear, which is always at our equinoxes; they being conveniently situated for observing great tracts of land about our earth's poles, which are entirely unknown to us. Hence we may conclude, that the year is of the same absolute length to the inhabitants of the earth and moon, though very different as to the number of days; we having 365¼ natural days, and the Lunarians only $12\frac{7}{8}$, every day and night in the moon being as long as 29½ on the earth.

438. The inhabitants of the moon, on the side next the earth, may find the longitude of their places as easily as we can find the latitude of ours. For the earth keeping constantly, or very nearly so, over one meridian of the moon, the east or west distances of places from that meridian are as easily found as we can find our distance from the equator by the altitude of our celestial poles.

439. As the sun only enlightens that half of the earth which is towards him, and leaves the opposite half in darkness, he does the same to the moon; but with this difference, that as the earth is surrounded by an atmosphere, we have twilight after the sun sets; but if the moon has neither an atmosphere of her own, nor is included in that of the earth (as is supposed), the Lunarians must have an immediate transition from the brightest sunshine to the blackest darkness.

440. The moon being an opaque spherical body (for her hills take off no more from her roundness than the inequalities on the surface of an orange take of from its roundness,) we can only see that part of the enlightened half which is towards the earth. And therefore, when the moon is at A, see plate IV. fig. 3, in conjunction with the sun S, her dark half is towards the earth, and she disappears, as at *a*, there being no light on that half to render it visible. When she comes to her first octant at B, or has gone an eighth part of her orbit from her conjunction a quarter of her enlightened side is towards the earth, and she appears horned, as at *b*. When she has gone a quarter of her orbit from between the earth and sun to C, she shows us one-half of her enlightened side, as at *c*, and we say she is a quarter old. At D she is in her second octant; and by showing us more of her enlightened side, she appears gibbous, as at *d*. At E her whole enlightened side is towards the earth; and therefore she appears round, as at *e*, when we say it is full moon. In her third octant at F, part of her dark side being towards the earth, she again appears gibbous, and is on the decrease, as at *f*. At G we see just one-half of her enlightened side; and she appears half decreased, or in her third quarter, as at *g*. At H we only see a quarter of her enlightened side, being in her fourth octant, where she appears horned, as at *h*. And at A, having completed her course from the sun to the sun again, she disappears, and we say it is new moon. Thus, in going from A to E, the moon seems continually to increase; and in going from E to A, to decrease in the same proportion; having like phases at equal distances from A to E, but as seen from the sun S, she is always full.

441. The moon does not appear perfectly round when she is full in the highest or lowest part of her orbit, because we have not a full view of her enlightened side at that time. When full, in the highest part of her orbit a small deficiency appears on her lower edge; and the contrary when full in the lowest part of her orbit.

442. From the figure it is evident, that when the moon changes to the earth, the earth appears full to the moon; and vice versa. For when the

moon is at A, new to the earth, the whole enlightened side of the earth is towards the moon; and when the moon is at E, full to the earth, its dark side is towards her. Hence a new moon answers to a full earth, and a full moon to a new earth. The quarters are also reversed to each other.

443. The position of the moon's cusps, or a right line touching the points of her horns, is very differently inclined to the horizon at different hours of the same days of her age. Sometimes she stands, as it were, upright on her lower horn, and then such a line is perpendicular to the horizon: when this happens, she is in what the astronomers call the nonagesimal degree, which is the highest point of the ecliptic above the horizon at that time, and is 90° from both sides of the horizon, where it is then cut by the ecliptic. But this never happens when the moon is on the meridian, except when she is at the very beginning of Cancer or Capricorn.

444. It is easy to demonstrate that the moon turns round her axis in the time that she goes round her orbit; for a spectator at rest, without the periphery of the moon's orbit, would see all her sides turned regularly towards him in that time. She turns round her axis from any star to the same star again, in 27d. 7h.; from the sun to the sun again in 29½d.; the former is the length of her siderial day, and the latter the length of her solar day. A body moving round the sun would have a solar day in every revolution, without turning on its axis; the same as if it had been at rest, and the sun moved round it; but without turning round its axis it could never have one siderial day, because it would always keep the same side towards any particular star.

445. If the earth had no annual motion, the moon would go round it so as to complete a lunation, a siderial, and a solar day, all in the same time. But because the earth goes forward in its orbit, while the moon goes round the earth in her orbit, the moon must go as much more than round her orbit, from change to change, in completing a solar day, as the earth has gone forward in its orbit during that time, i. e. almost a twelfth part of a circle. If the earth had no annual motion, the moon's motion round the earth, and her track in open space, would always be the same. But, as the earth and moon move round the sun, the moon's real path in the heavens is very different from her visible path round the earth; the latter being in a progressive circle, and the former in a curve of different degrees of concavity; which would always be the same in the same parts of the heavens, if the moon performed a complete number of lunations in a year without any fraction.

446. Newton ascribed the equality between the periods of rotation and revolution of the moon to her being of an oval form, and being denser on one side than the other; but La Grange has shown that though, from the diminution of the centrifugal force, the moon ought to be elevated at the equator, yet the aberration is four times as great in the direction of the equatorial diameter, which is directed towards the earth; and he has proved that, in consequence of the attraction of the earth on this elevated portion, the moon's motion is alternately accelerated and retarded; and that this attraction tends to produce an equality between the rotation and revolution of the moon, and to occasion a coincidence both in the position and motion of the nodes of the moon's orbit.

447. The motion of the moon in her orbit not being equable, if her rotation on her axis be uniform there must be parts on her eastern and western edges which are only occasionally seen. These changes, called her libration in longitude, are found to agree with an equable motion of rotation. There are parts also about her poles only occasionally visible. This, called her libration in latitude, arises from her axis being constantly inclined to the plane of her orbit, in an angle of about 86°. A diurnal libration also takes place; at rising a part of the western edge is seen, which is invisible at setting, and the contrary takes place with respect to the eastern edge. This is occasioned by the change of place in the spectator, occasioned by the earth's rotatation. Having found by any means, the moon's angular distance from the sun, the appearance of her disk for that time may be easily delineated in the following manner: Let the arch C O B P, Plate IV. figs. 6 and 8, represent the disk of the moon which is turned towards the earth, and let O P be cut by the diameter B C at right angles, take L P to L F as radius to cosine of the moon's angular distance from the sun, and upon B C as the greater and L F the less axis describe the semi-ellipse B F C; then B F C P will represent that portion of the moon's illumined face which is visible from the earth.

448. To illustrate this, let the nail in the end of the axle of a chariot-wheel represent the earth, and a pin in the nave the moon: if the body of the chariot be propped up so as to keep that wheel from touching the ground, and the wheel be then turned round by hand, the pin will describe a circle both round the nail and in the space it moves through. But if the props be taken away, the horses put to, and the chariot driven over a piece of ground which is circularly convex, the nail in the axle will describe a circular curve, and the pin in the nave will still describe a circle round the progressive nail in the axle, but not in the space through which it moves. In this case, the curve described by the nail will resemble in miniature as much of the earth's annual part round the sun, as it describes whilst the moon goes as often round the earth as the pin does round the nail; and the curve described by the pin will have some resemblance to the moon's path during so many lunations.

449. The surface of the moon being uneven, some are surprised that her edge does not appear jagged, as well as the curve bounding the light and dark places. But if we consider that what we call the edge of the moon's disk is not a single line set round with mountains, in which case it would appear irregularly indented, but large zone, having many mountains, lying behind one another from the observer's eye, we shall find that the mountains in some rows will be opposite to the vales in others; and thus fill up the inequalities so as to make her appear quite round; just as when one looks at an orange,

although its roughness be very discernible on the side next the eye, especially if the sun or a candle shines obliquely upon that side, yet the line terminating the visible part still appears smooth and even.

SECT. V. OF THE TIDES.

450. The tides are found to follow periodically the course of the sun and moon, and hence it has been suspected, in all ages, that the tides were somehow produced by the influence of these luminaries. Of this, Pliny, Ptolemy, Macrobius, and others, seem to have had some knowledge. The celebrated Kepler formed some conjectures long ago, as to the true cause of the tides. 'If,' says he, 'the earth ceased to attract its waters towards itself, all the water in the ocean would rise and flow into the moon. The sphere of the moon's attraction extends to our earth and draws up the water.' What Kepler only surmised, has been completely verified in the theory laid down by Newton, and by Halley from his principles. The principal phenomena of the tides are as follows:

451. I. The sea is observed to flow for about six hours from south to north, gradually swelling; and after a flux of about six hours, it seems to rest for a quarter of an hour; and then to ebb or retire back again from north to south for six hours more. Then, after a seeming pause of about ¼ of an hour, the sea again begins to flow; and so on alternately.

452. II. Hence the sea ebbs and flows twice a day, but falling every day later and later by about forty-eight minutes, the period of a flux and reflux being on an average about 12 h. 24 m. and the double of each 24 h. 48 m. which is the period of a lunar day, or the time between the moon's passing a meridian and coming to it again. So that the sea flows as often as the moon passes the meridian, both the arch above the horizon, and that below it; and ebbs as often as she passes the horizon, both on the eastern and western side. These are the most obvious appearances; the other phenomena are as follows:

453. III. The elevation towards the moon exceeds the opposite one a little, and the quantity of the ascent of the water is diminished from the equator to the poles.

454. IV. The sun raises and depresses the sea twice every day, in the same manner that the moon does; but the solar tides are much less than the lunar ones, although subject to the same laws.

455. V. The tides which depend upon the actions of the sun and moon are not distinguished but compound; and thus they form to appearance one united tide which, increasing and decreasing, produce neap and spring tides.

456. VI. In the syzygies the elevations from the actions of both luminaries concur, and the sea is more elevated; but the sea ascends less in the quadratures; for where the water is elevated by the action of the moon, it is depressed by that of the sun, and vice versa. Therefore, while the moon passes from the syzygy to the quadrature, the daily elevations are continually diminished; on the contrary, they are increased while the moon passes from the quadrature to the syzygy. At the new moon also cæteris paribus the elevations are greater; and those that follow one another the same day, are more different than those at full moon.'

457. VII. The greatest elevations and depressions take place on the 2d or 3d day after the new or full moon; and they are the greater, the nearer the luminaries are to the plane of the equator; being greatest in the syzygies, near the equinoxes.

458. VIII. The actions of the sun and moon are greater the nearer those bodies are to the earth; and the greatest tides happen when the sun is a little to the south of the equator: but this does not happen regularly every year, because some variation may arise from the situation of the moon's orbit, and the distance of the syzygy from the equinox.

459. IX. The mean force of the moon to move the sea, is to that of the sun nearly as 4½ to 1; and therefore if the action of the sun alone produce a tide of two feet, which it is said to do, then that of the moon will be nine feet; from which it follows, that the spring-tides will be eleven feet, and the neap-tides seven feet. But such elevations as far exceed these, happen from the motion of the water against some obstacles, and from the sea violently entering straits or gulfs, where the force is not broken till the water rises higher.

460. The preceding phenomena take place in the open sea, where the ocean is extended enough to be subject to their motions. But the particular situations of places, as to shores, capes, bays, &c. disturb in a considerable degree these general rules. We are now to show how these phenomena may be explained, from the principle of universal gravitation.

461. If the earth were entirely fluid and quiescent, its particles, by their mutual gravity towards each other, would form the whole mass into the figure of an exact sphere. If a power were to act on all the particles of this sphere, with an equal force, and in parallel directions, the whole mass would be moved together; but no change would be produced on its spherical figure, and its centre would have the same motion as each particle.

462. Upon this hypothesis, if the motion of the earth round the centre of gravity of the earth and moon, were destroyed, and the earth left to the influence of its gravitation towards the moon, as the power above mentioned, then the earth would fall or move straight towards the moon, without changing its spherical figure.

463. But the fact is, that the effects of the moon's action, as well as the action itself on different parts of the earth, are not equal; those parts, by the general rules of gravity, being most attracted that are nearest to the moon, and those being least attracted that are farthest from her; while the parts that are at a middle distance are attracted by a mean degree of force. Besides, all the parts are not acted upon in parallel lines, but in lines directed towards the centre of the moon, on both which accounts the spherical figure of the fluid earth must suffer some change from the action of the moon; so that in falling, as we have

supposed, the nearer parts being most attracted, would fall quickest, the farther parts being least attracted, would fall slowest, and the fluid mass would be lengthened out, and take a kind of spheroidical form.

464. Hence it appears (which must be carefully observed), that it is not the action of the moon itself, but the inequalities in that action, that cause any variation from the spherical figure; and that if this action were the same in all the particles, as in the central parts, and operating in the same direction, no such change would ensue.

465. Let us now admit the parts of the earth to gravitate towards its centre, then as this gravitation far exceeds the action of the moon, and much more exceeds the differences of her actions on different parts of the earth, the effect which results from the inequalities of these actions of the moon, will be only a small diminution of the gravity of those parts of the earth, which it endeavoured in the former supposition to separate from its centre; that is, those parts of the earth which are nearest to the moon, and those that are farthest from her, will have their gravity towards the earth somewhat abated, to say nothing of the lateral parts; so that supposing the earth fluid, the columns from the centre to the nearest, and to the farthest parts must rise, till, by their greater height, they are able to balance the other columns, whose gravity is less altered by the inequalities of the moon's action, and thus the figure of the earth must be an oblong spheroid.

466. Let us now consider the earth, instead of falling towards the moon by its gravity, as projected in any direction, so as to move round the centre of gravity of the earth and moon, it is evident, that in this case the several parts of the fluid earth will still preserve that relative position, and the figure of the earth will remain the same as if it fell freely towards the moon; that is, the earth will still assume a spheroidal form, having its longest axis directed toward the moon.

467. From the preceding reasoning, it appears, that the parts of the earth directly under the moon, as at H, plate X. fig. 4, and also the opposite parts at D, will have the flood or high-water at the same time, whilst the parts at B and F, at 90° distance, or where the moon appears in the horizon, will then have the ebbs, or lowest waters.

Hence as the earth turns round its axis from the moon to the moon again in 24h. 48m. this oval of water must shift with it, and thus there will be two tides of flood, and two of ebb in that time. It farther appears, that by the motion of the earth on her axis, the most elevated part of the water is carried beyond the moon, in the direction of the rotation; so that the water continues to rise after it has passed directly under the moon, though the immediate action of the moon there begins to decrease; and comes not to its greatest elevation, till it has got about half a quadrant farther. It continues to descend after it has passed at 90° from the point below the moon, to a like distance of half a quadrant.

468. The greatest elevation, therefore, is not in the line drawn through the centres of the earth and moon, nor the lowest points, where the moon appears in the horizon, but all these are removed about half a quadrant eastward from these points in the direction of the motion of rotation. Thus, in open seas, where the water flows freely, the moon, M, is generally past the north and south meridian, as at p, when the high water is at Z, and at n; the reason of which is plain, because the moon acts with the same force after she has passed the meridian, and thus adds to the libratory or waving motion which the water acquired when she was in the meridian.

469. Besides, the tides answer not always to the distance of the moon from the meridian, at the same places, for the action of the sun brings them on sooner when the moon is in her first and third quarters, and keeps them back later when she is in her second and fourth: because, in the former case, the tide, raised by the sun alone, would be earlier than that raised by the moon, and in the latter case, later.

470. We have hitherto adverted only to the action of the moon in producing the tides; but it is evident, that for the same reasons, the inequality of the sun's action on different parts of the earth, would produce a like effect, and a like deviation from an exact spherical figure; so that in reality, there are two tides, every natural day, from the action of the sun, as there are in a lunar day, from the action of the moon, subject to the same laws; and the lunar tide, as has been observed, is somewhat changed by the action of the sun, the change varying every day, on account of the inequality between the natural and lunar day.

471. Although the gravitation of the earth, towards the sun, is much greater than its gravitation towards the moon, yet, by reason of the sun's immense distance, to which the earth's diameter bears a small proportion, his action upon the side of the earth next to him differs but little from that which is exerted on the side farthest from him, and it is only the inequalities in that action that produce the tide. However, the effect of the sun is still very sensible, but that of the moon is much more so; for, by its proximity to the earth, there is a considerable inequality, both in the direction of its action, and in the intensity of that action upon different parts of the earth.

472. Hence it is easy to see, that the tides must be greatest at new and at full moon, because the actions of the sun and moon are then exerted in the same directions. These are called spring tides; whereas, when the sun and moon are 90° distant, the action of the one luminary raises the tides, just where that of the other depresses them, and thus are produced what are called neap tides. Newton has calculated the effects of the sun and moon respectively upon the tides from their attractive powers, the former he finds to be to the force of gravity, as one to 12,868,200. To find the force of the latter upon the water, he compares the spring tides at the mouth of the river Avon, below Bristol, with the neap tides, and finds the proportion as nine to five; whence, after several necessary corrections, he concludes, that the force of the moon, in moving the waters, is to that of the sun, as 4·4815 to one.

473. Dr. Horsley, however, in his edition of

neap tides precisely at the quarters, but
r two after; because, as in other cases,
his, the effect is not greatest or least when
mediate influence of the cause is greatest
t; for if the actions of the sun and moon
cease, yet the tides would continue for
me; as the waves of the sea continue their
after a storm.

The different distances of the moon from
th produce a sensible variation in the tides;
wton has shown, that they increase as the
f the distances decrease; so that the moon
her distance, would produce a tide eight
greater. The moon describes an oval
the earth; and at her nearest distance,
es a tide sensibly greater than at her
distance. Hence two great spring tides
ucceed each other, at the distance of four-
ys; for if the moon be at her least distance
hange, and therefore produce a great spring
will be at her greatest distance at the
d therefore the spring tide will be less.

The spring tides are highest, and the
ides lowest, about the time of the equi-
because, were the sun or moon in the
f the world, there would be no tide; for
tion would raise the water at the equator
parallel, equally round the earth: there-
e nearer they are to the equator, the
must be the effect. When the sun and
traverse the equator, the tides, which are
them, will traverse the greatest circle, and
ers will be put into the greatest agitation.
ill also be the greater at these times, be-
the earth is nearer to the sun, about the
ing of March and end of September, than
ummer months.

As the greatest of the two tides, happen-
every diurnal revolution of the moon, is
which the moon is nearest the zenith or
therefore, while the sun is in the northern
he greater of the two diurnal tides, in our

Hence it is obvious why the tides are not so great in the torrid zone, between Africa and America, where the ocean is narrower, as in the temperate zones on either side; and hence, also, we see why the tides are so small in islands, at great distances from the shores. It likewise appears, that the waters cannot rise on one shore of the Atlantic Ocean, but by descending on the other, so that at the intermediate islands it must remain at a mean height, between its elevations on those two shores.

480. The tides that enter the mouths of rivers from the ocean, are greatly retarded in their progress, by the currents of the rivers. Mr. Condamine, while in South America, observed, that in the river Amazons, there were five high waters, and four intermediate low waters at once; and a similar circumstance takes place in the Thames. For the tide propagated by the moon in the German Ocean, when she is three hours past the meridian, takes twelve hours longer to come to London Bridge, so that when it is high water there, a new tide is already come to its height in the ocean; and in some intermediate place, it must be low water at the same time.

481. At several places, it is high water three hours before the moon comes to her meridian; but that tide, which the moon pushes as it were before her, is only the tide opposite to that which was raised by her, when she was nine hours past the opposite meridian.

482. There are no sensible tides in the Baltic, the Mediterranean, or the Black Seas; for they communicate with the ocean by such narrow inlets, and are of so immense an extent, that they cannot speedily receive and empty water enough, to raise or depress their surfaces sensibly. In the Caspian Sea, and in lakes, &c. the moon's attraction is nearly the same upon all parts of their surface, so that no sensible swelling can take place in their waters.

483. We may also conclude, that by reason

farther that a ray descends in the atmosphere, the more dense is the medium through which it passes, it will move in the curve E A, and at last enter the eye in the direction of A F Q, a tangent to the curve. Therefore the star will appear at Q instead of S, and thus its apparent place Q will be nearer the zenith than its true place.

503. The nearer the star S is to the horizon, the greater will be the refraction as well as the distance between the apparent and true place of the star. Hence the heavenly bodies appear to be above the horizon, by reason of the refraction, when they are really below it. There is no refraction in the zenith, for a ray, coming from Z, will fall perpendicularly on the surface of the atmosphere at G, and continue its rectilinear course to the eye at A.

The following neat and elegant method of computing the atmospherical refraction has been given by Dr. Brinkley, the present learned and active professor of astronomy at Dublin:

504. Let L I, fig. 7, plate VI, be a ray of light falling on the atmosphere at I, and refracted in the curvineal course I S. The object appears to a spectator at S in the direction S T, a tangent to the curve, V S T is the apparent zenith distance. The space in the figure between the concentric circles represents all the atmosphere which has any effect on the ray of light, so that the light may be considered as passing out of a vacuum into this space.

505. If the surface of the earth were a plane, the different strata of air might be considered as parallel thereto; and by the principles of optics, the refraction would be the same as would take place were the ray of light to pass from a vacuum into air of the same density with that at the surface. It is therefore evident, that if we take into account the spherical form of the earth and atmosphere, the error resulting from the supposition of an uniform atmosphere will necessarily be very small, compared with the change occasioned by considering the atmosphere spherical, provided that change be small.

506. Let $m : 1 ::$ sin. of incidence : sin. of refraction, when a ray of light passes from a vacuum into air of the density of that at the surface of the earth. Suppose all the air contracted into an uniform atmosphere, then S I is a right line. Let $HIL = i$, $SIC = r$, $VSI = z$, $SC = a$, the height of the uniform atmosphere $= l$, or $CI = a + l$.

$$a + l : a :: \sin. z : \sin. r$$
$$1 \;\; : m :: \sin. r : \sin. i.$$

Hence

$$\sin. i = \frac{m\,a \sin. z}{a + l} = m \sin. z\left(1 - \frac{l}{a}\right) \text{nearly.}$$

$$\sin. r = \frac{a \sin. z}{a + l} = \sin. z\left(1 - \frac{l}{a}\right) \text{nearly.}$$

Let $i = r + R$, then R is the quantity of refraction. $\text{Sin.}(r + R) = \sin. i$.
Or, because R is small, $\sin. r + \cos. r \sin. R = \sin. i$, or $\sin r + R \sin. 1'' \cos. r = \sin. i$, substituting in this equation for sin. r and sin. i, as above. Also for cos. r.

$$\sqrt{1 - \sin.^2 z\left(1 - \frac{l}{a}\right)} =$$

$$\sqrt{\cos.^4 z + \frac{z\,l}{a} \sin.^2 z} =$$

$$\cos. z\left(1 + \frac{l}{a} \tan.^2 z\right)$$

nearly, we obtain

$$R = \frac{\sin. i.—\sin. r}{\sin. 1'' \times \cos r} = \frac{\overline{m - 1} \cdot \sin. z \cdot \left(1 -\right.}{\sin. 1''. \cos. z\left(1 + \frac{l}{a}\right.\text{ ta}}$$

$$= \frac{(m - 1) \tan. z}{\sin. 1''} - \frac{(m - 1)\, l. \tan.^2 z}{a \sin. 1'' \;\; \cos.^2 z} \text{ nea}$$

507. Taking $z = 80°$, $2 = 5$ and $a =$
miles, the second term (arising from the s
cal figure of the atmosphere) $= 10''$ n
If a were indefinite, that is, if the surface
earth were a plane, this second term
vanish. Hence we may safely conclude, t
far as 80 zenith distance, the error arising
supposing the atmosphere of uniform d
must be much less than 10″, and that
quently the above expression gives the refr
as far as 80 from the zenith with sufficie
curacy. If we neglect the second term, t
fraction will vary as the tangent of the
distance.

508. The exact experiments of M. M. Bi
Arago, have determined the value of m —
·0002946, when the barometer is at 29,
metre) and Fah. therm. at 32°. From th
periments, and the law of expansion of
may be inferred that $\frac{m - 1}{\sin. 1''} =$

$$\frac{1{,}0375}{1 +{,}002083\,(t - 32)} \times \frac{b}{29{,}60} \times 57''\,82,$$

where b is height of the barometer, and t
Fahrenheit's thermometer. When $t = 5$
$b = 29{,}60$ inches, this expression gives
$= 57{\cdot}82$, a result independent of astron
observations.

509. The French tables of refraction, b
lambre, founded on astronomical observ
give $\frac{m - 1}{\sin. 1''} = 57{\cdot}72''$; and from upwa
500 observations made by himself, Dr. Br
finds $\frac{m - 1}{\sin. 1''} = 57{\cdot}56''$.

510. Mr. H. Atkinson, in a memoir recent
before the Astronomical Society of Londo
printed in the forth-coming part of the So
Memoirs, has treated the subject of refr
in a manner altogether new; and has e
talents for scientific investigation which
him in a high rank among the philosop
the present day. He treats the questio
gether as one depending on the optical p
ties of air, by dividing the whole atmo
into various concentric strata, and compu
deviation produced by refraction on each st
We should be glad, did our limits permit
quote very largely from this most elabor
instructive essay, but we must content ou
with extracting one of the results of his
in a table of mean refraction.

Table of Mean Refraction, adapted to 50° Fahrenheit, and 29·6 inches of Barometric pressure

ith dist	Refraction	Zenith dist.	Refraction.	Zenith dist.	Refraction.	Zenith dist.	Refraction.
1° 0′	0′ 1·01″	58° 30′	1′ 33·87″	76° 20′	3′ 52·93″	84 40″	9′ 15·59″
2 0	0 2·01	59 0	1 35·72	76 30	3 55·80	84 45	9 22·86
3 0	0 3·02	59 30	1 37·64	76 40	3 58·74	84 50	9 30·32
4 0	0 4·03	60 0	1 39·60	76 50	4 1·75	84 55	9 37·95
5 0	0 5·05	60 20	1 40·93	77 0	4 4·83	85 0	9 45·77
6 0	0 6·06	60 40	1 42·30	77 10	4 8·00	85 5	9 53·79
7 0	0 7·08	61 0	1 43·70	77 20	4 11·23	85 10	10 2·01
8 0	0 8·11	61 20	1 45·13	77 30	4 14·55	85 15	10 10·44
9 0	0 9·14	61 40	1 46·59	77 40	4 17·95	85 20	10 19·09
10 0	0 10·17	62 0	1 48·08	77 50	4 21·43	85 25	10 27·96
11 0	0 11·21	62 20	1 49·60	78 0	4 25·00	85 30	10 37·00
12 0	0 12·26	62 40	1 51·16	78 10	4 28·66	85 35	10 46·41
13 0	0 13·32	63 0	1 52·75	78 20	4 32·41	85 40	10 50·01
14 0	0 14·38	63 20	1 54·37	78 30	4 36·27	85 45	11 5·87
15 0	0 15·46	63 40	1 56·03	78 40	4 40·23	85 50	11 16·00
16 0	0 16·54	64 0	1 57·73	78 50	4 44·30	85 55	11 26·40
17 0	0 17·64	64 20	1 59·48	79 0	4 48·48	86 0	11 37·09
18 0	0 18·74	64 40	2 1·26	79 10	4 52·79	86 5	11 48·09
19 0	0 19·86	65 0	2 3·10	79 20	4 57·21	86 10	11 59·41
20 0	0 21·00	65 15	2 4·50	79 30	5 1·76	86 15	12 11·05
21 0	0 22·14	65 30	2 5·92	79 40	5 6·43	86 20	12 23·03
22 0	0 23·31	65 45	2 7·38	79 50	5 11·25	86 25	12 35·36
23 0	0 24:49	66 0	2 8·86	80 0	5 16·21	86 30	12 48·05
24 0	0 25·68	66 15	2 10·76	80 10	5 21·31	86 35	13 1·13
25 0	0 26·90	66 30	2 11·91	80 20	5 26·57	86 40	13 14·61
26 0	0 28·13	66 45	2 13·48	80 30	5 32·00	86 45	13 28·50
27 0	0 29·39	67 0	2 15·08	80 40	5 37·59	86 50	13 42·82
28 0	0 30·67	67 15	2 16·71	80 50	5 43·37	86 55	13 57·59
29 0	0 31·97	67 30	2 18·38	81 0	5 49·33	87 0	14 12·83
30 0	0 33·30	67 45	2 20·08	81 10	5 55·50	87 5	14 28·55
31 0	0 34·66	68 0	2 21·82	81 20	6 1·87	87 10	14 44·78
32 0	0 36·04	68 15	2 23·60	81 30	6 8·46	87 15	15 1·54
33 0	0 37·45	68 30	2 25·41	81 40	6 15·27	87 20	15 18·86
34 0	0 38·90	68 45	2 27·27	81 50	6 22·32	87 25	15 36·75
35 0	0 40·38	69 0	2 29·17	82 0	6 29·63	87 30	15 55·24
36 0	0 41·89	69 15	2 31·12	82 5	6 33·37	87 35	16 14·36
37 0	0 43·45	69 30	2 33·11	82 10	6 37·19	87 40	16 34·14
38 0	0 45·05	69 45	2 35·14	82 15	6 41·7	87 45	16 54·60
39 6	0 46·69	70 0	2 37·21	82 20	6 45·03	87 50	17 15·78
40 0	0 48·38	70 15	2 39·32	82 25	6 49·07	87 55	17 37·69
41 0	0 50·12	70 30	2 41·49	82 30	6 53·18	88 0	18 0·41
42 0	0 51·91	70 45	2 43·72	82 35	6 57·37	88 5	18 24·06
43 0	0 53·76	71 0	2 46·00	82 40	7 1·65	88 10	18 48·57
44 0	0 55·66	71 15	2 48·36	82 45	7 6·01	88 15	19 13·95
45 0	0 57·63	71 30	2 50·77	82 50	7 10·45	88 20	19 40·24
46 0	0 59·67	71 45	2 53·23	82 55	7 14·98	88 25	20 7·39
47 0	1 1·79	72 0	2 55·75	83 0	7 19·60	88 30	20 35·58
48 0	1 3.98	72 15	2 58·33	83 5	7 24·31	88 35	21 4·88
49 0	1 6·27	72 30	3 0·98	83 10	7 29·12	88 40	21 35·31
50 0	1 8·64	72 45	3 3·71	83 15	7 34·02	88 45	22 7·02
50 30	1 9·87	73 0	3 6·51	83 20	7 39·03	88 50	22 39·92
51 0	1 11·12	73 15	3 9·40	83 25	7 44·13	88 55	23 14·05
51 30	1 12·40	73 30	3 12·36	83 30	7 49·35	89 0	23 49·49
52 0	1 13·71	73 45	3 15·41	83 35	7 54·67	89 5	24 26·42
52 30	1 15·04	74 0	3 18·56	83 40	8 0·11	89 10	25 4·66
53 0	1 16·41	74 15	3 21·79	83 45	8 5·66	89 15	25 44·26
53 30	1 17·81	74 30	3 25·13	83 50	8 11·34	89 20	26 25·25
54 0	1 19·24	74 45	3 20·56	83 55	8 17·13	89 25	27 7·36
54 30	1 20·71	75 0	3 32·09	84 0	8 23·06	89 30	27 51·22
55 0	1 22·21	75 10	3 34·51	84 5	8 29·12	89 35	28 36·89
55 30	1 23·75	75 20	3 36·97	84 10	8 35·31	89 40	29 24·47
56 0	1 25.33	75 30	3 39·49	84 15	8 41·65	89 45	30 14·05
56 30	1 26·95	75 40	3 42·06	84 20	8 48·13	89 50	31 5·72
57 0	1 28·61	75 50	3 44·69	84 25	8 54·73	89 55	31 59·57
57 30	1 30·31	76 0	3 47·38	84 30	9 1.54	90 0	32 55·72
58 0	1 32·07	76 10	3 50·12	84 35	9 8·48		

512. This refraction of the light by the atmosphere produces the twilight; for while the sun is less than 18° below the horizon, his rays, although prevented from reaching us directly, by reason of the interposed body of the earth, yet fall upon the superior regions of the atmosphere, and are so refracted and reflected by its particles as to produce a brightness over the horizon, which continues through the whole night during the summer months, in the regions of the earth towards the poles.

513. The subject of twilights has given rise to a problem which, from the talents of the mathematicians who have applied themselves to its investigation, has obtained considerable celebrity. The problem is, to find the day in any given latitude in which the *twilight is the shortest*. It might be imagined that the twilights would increase from midsummer to midwinter; but this both observation and theory show not to be the case; for though the twilights continue to increase in duration for some time after the sun's declination, allowed a denomination different from the latitude, yet they reach a maximum, after which they again increase.

514. In fig. 11, plate VI, let P be the pole, Z the zenith, HO the horizon, AL the boundary of twilight, $S\,s$ the places of the sun at the beginning and end of twilight. Draw the great circles PS, Ps, ZS, and Zs, also $PR = ZP$, making the angle $ZPR = \angle\, SPs$, and complete the triangle ZRs with great circles ZR, RS. Then as the $\angle\, ZPR = \angle\, SPs$, we have the $\angle\, RPs = \angle\, ZPS$; also, since $Ps = PS$, and $PR = PZ$, the triangles RPs, ZPS, are similar and equal: therefore $Rs = ZS$, and in the triangle ZRs we have given ZS and Rs, and as ZP, RP, are equal and given, and the $\angle\, ZPR = \angle\, SPs$ a minimum, we shall have ZR the least possible, which by the writers on spherics it is shewn to be when $= Zs \dot{-} Rs$, Rs coincide: hence the following

CONSTRUCTION.—With ZP, rP, each = colat of the place, and $Zr = Zs - Rs\ (ZS) = 18°$; describe the isosecles triangle ZPr prolong Zr making $rs = ZS = 90$, draw Ps, which is the co-declination of the sun on the required day.

515. CALCULATION.—Draw Pz perpendicular and bisecting Zr in z, then, by spherical trigonometry, we have cos. zr : rad. 1 :: cos. Pr : cos. Pz, or cos. $Pz = \frac{\text{cos. } Pr}{\text{cos. } zr}$: and in the triangle zPs, as rad. 1 : cos. zs :: cos. $Pz = \frac{\text{cos. } Pr}{\text{cos. } zr}$: cos. Ps, or sin. decl. $= \frac{\text{cos. } zs \times \text{cos. } Pr}{\text{cos. } zr}$

$$= \frac{\text{cos. } 99° \times \text{sine lat.}}{\text{cos. } 9°.} = \frac{-\text{sine } 9° \times \text{sine lat.}}{\text{cos. } 9°.}$$

$= -$ tang. 9° × sine lat. A simple and general theorem, from which it appears that the declination and latitude are of contrary names. From this theorem it appears, that the shortest twilight at Petersburgh is about October 14th; at London, October 11th, and at Rome, October 9th.

516. The rays of light are equally refracted by the atmosphere, whether they come from the sun, the moon, or the stars; but the quantity of the refraction, and therefore the duration of the twilight, are influenced by the changes which are
perpetually taking place with respect
and cold, the moisture and dryness,
atmosphere.

PART IV.

ASTRONOMICAL OPERATION
CALCULATIONS.

SECT. I.—OF DRAWING A MERIDIA

517. Upon a plain board, set para
horizon, describe a circle ABF, as in
fig. 2. And upon the centre C, erect
gnomon, exactly perpendicular to
high, that the top of the shadow th
fall upon the circumference of the ci
the middle of the forenoon. Mark th
exactly where the top of the shadow
forenoon, and the point F where the
shadow falls on the circumference. in
of the afternoon. Then, through the
draw the line ACD, bisecting the
The AD is the meridian required.

518. It is proper to draw several
circles, and to make observations with
that they may confirm one another.
happens to be clouded in one, it may
another. It is best to make these ob
about the solstices, when the sun does
his declination sensibly; and the su
stice is to be preferred.

519. The sun is evidently highest w
meridian; and at equal distances the
equal altitudes. Therefore, when the
DB, DF, are equal, the shadows CB
be equal, and therefore the altitudes eq
vice versa.

520. 2. Hang up two threads and
AB, CD, plate VIII. fig. 13, at a
tance, in vessels of water, to keep the
of which CD is movable towards the
right, upon a pin C. Wait till the
E, and the star Alioth, F, (in the gr
rump), come into the same plumb lin
an eye placed at I. At that instant
before) move the thread CD also into
line; so that the thread CD may hide
AB, and the polar star E from the
Then the plane ABCD is the pla
meridian; and where it intersects the
plane, is the meridian line. And the
be done with the star, called Cassiop
To take away the star's rays, look
small hole in a thin plate. This mu
formed in a calm place.

521. If it is wished to have a meridi
in some other place, let the threads a
mets AB, CD, remain; and hang up
ab, *cd*, in the place proposed, as in fig
ting *ab* be movable upon a pin at
wait till any star, as G, comes into
abcd to the eye, at *h*; and at tha
move the thread *ab*, till the same star
the plane *abcd*, to the eye at *h*; then
the plane of the meridian. This is best
the help of an assistant. This meth
time deviate a little from the truth, occa
the stars changing their places; but th
is very inconsiderable for several years.

522. 3. Having a clock or watch,
nutes and seconds, find the northing o
Alioth, F, fig. 13, by the astronomical ta

wait till the polar star E is in a plumb line with F. At that instant, set the clock to the said time of northing. And next day at twelve o'clock, draw a meridian line, by the shadow of a plumb line hung in the sun. Or find the time of southing of any other star, as G, and the clock remaining as before, when she shows the time of southing, place the threads *ab*, *cd*, fig. 14, so that the line G*h* may pass through them both. Then *abcd* will be in the plane of the meridian.

523. These methods are only to be considered as affording a first and very rough approximation to the meridian, and may assist in placing a transit instrument nearly in its position with respect to the meridian, previously to the application of the more exact methods by which the final adjustment is made.

Sect. II.—Of Finding Time, and the Equation of Time.

524. Having drawn a meridian line, as directed in the last article, the time when the sun, or any other celestial body is exactly in the meridian, may be found by a common quadrant, placing the edge of it along the line, and observing when the sun or other luminary can be seen exactly through its two sights, and noting exactly the time; which, supposing the luminary viewed to be the sun, will be precisely noon, or twelve o'clock: but, as the apparent diameter of the sun is pretty large, it ought to be known exactly when his centre is in the meridian, which will be some short space after his eastern limb has arrived at it, and before his western limb comes thither. It will be proper, therefore, to observe exactly the time of the two limbs being seen through the sights of the quadrant; and the half of the difference between these times, added to the one or subtracted from the other, will give the exact time when the sun's centre is in the meridian.

525. The same method is equally applicable to the moon; but not to the stars, which have no sensible diameter. It is found, by observation, that the stars appear to go round the earth in twenty-three hours, fifty-six minutes, four seconds, and the sun in twenty-four hours; so that the stars gain three minutes, fifty-six seconds upon the sun every day, which amounts to one diurnal revolution in a year; and therefore, in 365 days, as measured by the returns of the sun to the meridian, there are 366 days as measured by the stars returning to it: the former are called solar days, and the latter siderial.

526. These may be considered as first steps in the determination of this important element. With the aid of a transit instrument, the time can always be determined with the greatest simplicity and exactness. But supposing the latitude of the place of observation to be known, the time may be deduced with great ease and precision from the altitude of any celestial object observed with a quadrant or sextant, taken by reflection from a basin of water or quicksilver. Equal altitudes of stars, perhaps, furnish the most ready and convenient method of determining the time, as the use of trigonometrical formulæ is not required; and there is besides no farther dependence on the goodness of the instrument, than that it shall be in the same state at both observations.

527. As we shall have occasion, when treating of Nautical Astronomy (which we shall do under the article NAVIGATION), to explain the various ways by which time may be found, and consequently, how clocks may be regulated, we shall here merely give the practical method of finding the error of a clock by equal altitudes of fixed stars.

528. Take the altitude of a star when eastward of the meridian, and mark the time by the clock when the observation is made; wait till the star when west of the meridian comes to the same altitude, and mark the time by the clock. Half the sum of these times will be the time by the clock when the star is on the meridian. Now the siderial time at which a star is on the meridian is equal to the star's right ascension; and the solar or apparent time is obtained by subtracting the sun's right ascension from the star's. Hence the error of the clock, either for mean or siderial time, is obtained at once. In practice, however, it is preferable to take several altitudes, and their corresponding times, both eastward and westward of the meridian, and to take half the sum of the mean of the times for the time by the chronometer at which the star passes the meridian.

529. For example, suppose that on February 20th, 1826, the time at which Regulus had the following altitudes, was as under:

Times E. of the merid.			Alts.	Times W. of the merid.			
h.	m.	s.		h.	m.	s.	
9	4	26	38° 0′	16	43	14	
	5	14	10′		42	26	
	6	7	20′		41	31	
	6	58	30′		40	43	
9	5	41·25	mean.	16	41	58·5	
				9	5	41·25	
				25	47	39·75	
				12	53	49·87	Time

by the chronometer when the star is on the meridian. Hence by comparing this with the star's right ascension on the same day (9 h. 59 m. 8·8 s.), it is found that the watch is 2h. 54m. 41·07 s. fast for siderial time.

530. If the earth had no annual motion, but only a diurnal, any given meridian would revolve from the sun to the sun again, in the same quantity of time as from any star to the same star again; because the sun would never change his place with respect to the stars. But, as the earth advances almost a degree eastward in its orbit, in the time that it turns eastward round its axis, whatever star passes over the meridian on any day with the sun, will pass over the same meridian on the next day, when the sun is almost a degree short of it; that is, three minutes, fifty-six seconds sooner. If the year contained only 360 days, as the ecliptic does 360 degrees, the sun's apparent place, so far as his motion is equable, would change a degree every day; and then the siderial days would be just four minutes shorter than the solar.

531. As the motion of the earth round its axis is perfectly uniform and equal at all times of the year, the siderial days are always precisely of an

equal length; and so would the solar or natural days be, if the earth's orbit were a perfect circle, and its axis perpendicular to its orbit. But the earth's diurnal motion on an inclined axis, and its annual motion in an elliptic orbit, cause the sun's apparent motion in the heavens to be unequal: for sometimes he revolves from the meridian to the meridian again in somewhat less than twenty-four hours, shewn by a well-regulated clock; and at other times in somewhat more: so that the time shewn by a good clock and a true sun-dial is never exactly the same, excepting on the 15th of April, the 16th of June, the 31st of August, and the 24th of December. The clock, if it goes equably and true all the year round, will be before the sun from the 24th of December till the 15th of April; from that time till the 16th of June, the sun will be before the clock; from the 16th of June till the 31st of August, the clock will be again before the sun; and from thence to the 24th of December, the sun will be faster than the clock.

532. The equation of time, therefore, or difference between the time shewn by a well-regulated clock and a true sun-dial, depending upon two causes, viz. the obliquity of the ecliptic, and the unequal motion of the earth in it, the united effects, resulting from their combination, may be explained in the following manner:—

533. Let Z ♈ z ♎, in plate V, fig. 1, be the earth; Z F R z, its axis; *a b c d e*, &c. the equator; A B C D E, &c. the northern half of the ecliptic from ♈ to ♎ on the side of the globe next the eye; and M N O P, &c. the southern half on the opposite side from ♎ to ♈. Let us suppose a fictitious sun to set out from ♈, at the same instant with the real sun. Let the points at A B C D E F G, &c. quite round, from ♈ to ♈ again, bound equal portions of the ecliptic, gone through in equal times by the real sun; and those at *a b c d e f g*, &c. equal portions of the equator described in equal times by the fictitious sun; and let Z ♈ z be the meridian.

534. As the real sun moves obliquely in the ecliptic, and the fictitious sun directly in the equator, with respect to the meridian; a degree, or any number of degrees, between ♈ and F on the ecliptic, must be nearer the meridian Z ♈ z, than a degree, or any corresponding number of degrees, on the equator from ♈ to *f*; and the more so, as they are the more oblique: and therefore the true sun comes sooner to the meridian every day, whilst he is in the quadrant ♈ F, than the fictitious sun does in the quadrant ♈ *f*; for which reason, the solar noon precedes noon by the clock, until the real sun comes to F, and the fictitious to *f*; which two points, being equidistant from the meridian, both suns will come to it precisely at noon by the clock.

535. While the real sun describes the second quadrant of the ecliptic F G H I K L, from Cancer to ♎, he comes later to the meridian every day, than the fictitious sun moving through the second quadrant of the equator, from *f* to ♎; for the points at G H I K, and L, being farther from the meridian, their corresponding points at *g h k* and *l*, must be later in coming to it: and as both suns come at the same moment to the point ♎, they come to the meridian at the moment of noon by the clock.

536. In departing from Libra, through
third quadrant, the real sun going through
O P Q towards ♑ at R, and the fictitious
through *m n o p q* towards *r*, the former come
the meridian every day sooner than the la
until the real sun comes to ♑, and the fictit
to *r*, and then they come both to the meridia
the same time. Lastly, as the real sun mo
equably through S T U V W, from ♑ tow
♈; and the fictitious sun through *s t u v w*, fro
towards ♈, the former comes later every da
the meridian than the latter, until they b
arrive at the point ♈, and then they mak
noon at the same time with the clock.

537. We now proceed to explain the o
cause of this difference, viz. the inequality of
sun's apparent motion, which is slowest in su
mer, when the sun is farthest from the earth,
swiftest in winter when he is nearest to it.

538. As the real sun moves unequably in
ecliptic, let us suppose a fictitious sun to m
equably in a circle coincident with the plane
the ecliptic. Let A B C D in plate V., fig. 2,
the ecliptic or orbit in which the real sun mov
and the dotted circles *a b c d* the imaginary or
of the fictitious sun: each going round in a y
according to the order of letters, or from wes
east. Let H I K L be the earth turning rou
its axis the same way every twenty-four hou
and suppose both suns to start from A and *a*,
a right line with the plane of the meridian E
at the same moment: the real sun at A, be
then at his greatest distance from the earth,
which time his motion is slowest; and the
titious sun at *a*, whose motion is always equab
because his distance from the earth is suppo
to be always the same. In the time that
meridian revolves from H to H again, accord
to the order of the letters H I K L, the real
has moved from A to F; and the fictitious wit
quicker motion from *a* to *f*, through a large a
therefore, the meridian E A will revolve soo
from H to *h* under the real sun at F, than fr
H to *k* under the fictitious sun at *f*; and con
quently it will then be noon by the sun-d
sooner than by the clock.

539. As the real sun moves from A towa
C, the swiftness of his motion increases all
way to C, where it is at the quickest. But no
withstanding this, the fictitious sun gains
much upon the real, soon after his departi
from A, that the increasing velocity of the r
sun does not bring him up with the equal
moving fictitious sun, till the former comes to
and the latter to *c*, when each has gone h
round its respective orbit; and then being
conjunction, the meridian E H, revolving to E
comes to both suns at the same time, and the
fore it is noon by them both at the same mome

540. But the increased velocity of the r
sun, now being at the quickest, carries him bef
the fictitious one; and therefore, the same m
ridian will come to the fictitious sun sooner th
to the real: for whilst the fictitious sun mov
from *c* to *g*, the real sun moves through a grea
arc from C to G: consequently, the point K
its noon by the clock when it comes to *k*,
not its noon by the sun till it comes to *l*. A
although the velocity of the real sun diminis
all the way from C to A, and the fictitious

ASTRONOMY.

Fig. 1.

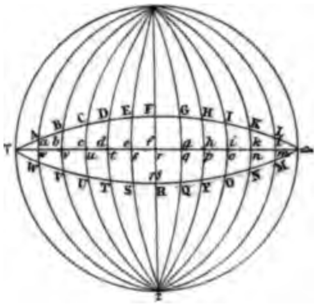


Fig. 2.

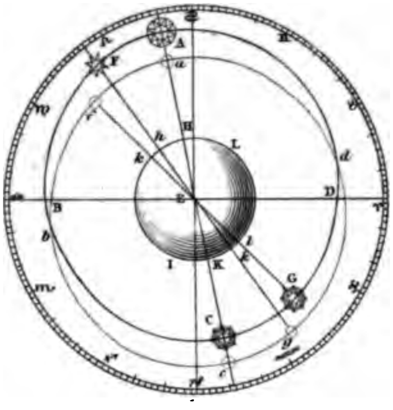


Fig. 3.

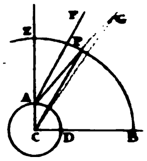


Fig. 7.

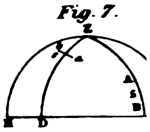


Fig. 4.

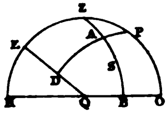


Fig. 5.

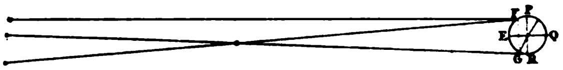
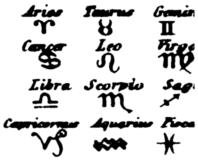


Fig. 6.



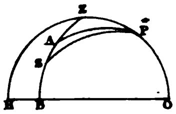


Fig. 8.

Fig. 9.

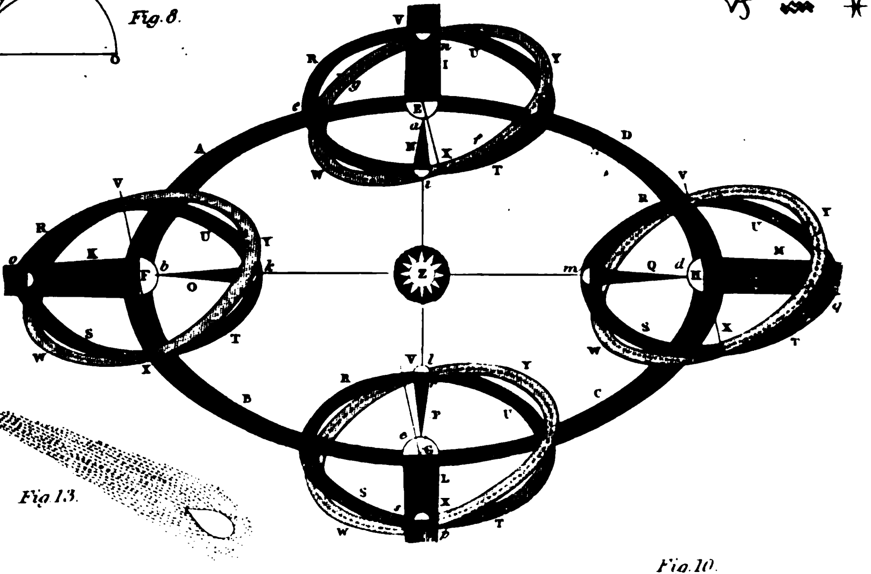
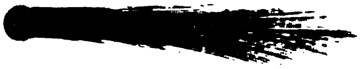


Fig 13.

Fig. 10.



Path & appearances of the Comet of 1680 whose period is 575 Yrs

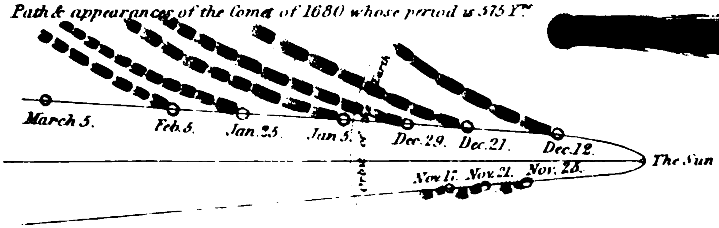


Fig. 11.

Fig. 12.

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by an equable motion is still coming nearer to the real sun, yet they are not in conjunction till the one comes to A and the other to *a*, and then it is noon by them both at the same moment.

541. Thus, it appears, that the solar noon is always later than noon by the clock, whilst the sun goes from C to A; sooner, whilst he goes from A to C; and at these two points the sun and clock being equal, it is noon by them both at the same moment. Upon these principles tables for the equation of time are calculated, the one giving the difference between the sun's true and mean motion; the other the difference between the sun's longitude and right ascension; from which the arc is calculated by addition or subtraction. But the calculation cannot, from the precession of the equinoxes, be depended upon for a considerable length of time.

542. By means of the following Table, however, of the Equation of Time for 1824, and the subjoined auxiliary Table, the Equation of Time may be found for any subsequent year in the present century, with sufficient exactness for regulating clocks and watches for the practical purposes of civil life.

543 *Equation of Time, when the Sun is on the Meridian of Greenwich, for every day in the year* 1824.

Days.	Jan.		Feb.		Mar.		April		May.		June		July		Aug.		Sept.		Oct.		Nov.		Dec.	
	Add		Add		Add		Add		Sub.		Sub.		Add.		Add.		Sub.		Sub.		Sub.		Sub.	
	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.	M.	S.
1	3	35	13	52	12	36	3	55	3	5	2	33	3	25	5	58	0	12	10	23	16	15	10	37
2	4	4	14	1	12	24	3	37	3	13	2	24	3	37	5	54	0	31	10	41	16	16	10	14
3	4	32	14	8	12	11	3	19	3	19	2	14	3	48	5	50	0	51	11	00	16	16	9	51
4	5	0	14	14	11	58	3	1	3	25	2	5	3	59	5	45	1	10	11	18	16	15	9	26
5	5	27	14	20	11	44	2	44	3	31	1	54	4	9	5	39	1	30	11	36	16	14	9	2
6	5	54	14	25	11	30	2	26	3	36	1	44	4	19	5	33	1	50	11	54	16	11	8	36
7	6	21	14	29	11	15	2	9	3	41	1	33	4	29	5	26	2	10	12	11	16	8	8	10
8	6	47	14	32	11	00	1	51	3	45	1	22	4	39	5	19	2	30	12	28	16	4	7	44
9	7	13	14	34	10	45	1	34	3	48	1	11	4	48	5	10	2	51	12	44	15	59	7	17
10	7	38	14	36	10	29	1	18	3	51	0	59	4	56	5	2	3	12	13	0	15	53	6	50
11	8	2	14	36	10	30	1	1	3	53	0	47	5	4	4	53	3	32	13	15	15	46	6	22
12	8	26	14	36	9	57	0	45	3	55	0	35	5	12	4	43	3	53	13	30	15	38	5	54
13	8	49	14	35	9	40	0	29	3	56	0	23	5	19	4	32	4	14	13	44	15	30	5	26
14	9	11	14	34	9	23	0	14	3	57	0	10	5	26	4	22	4	35	13	58	15	21	4	57
15	9	33	14	31	9	6	0	2	3	57	0	2	5	32	4	10	4	56	14	11	15	10	4	28
							Sub.				Add													
16	9	54	14	28	8	48	0	16	3	56	0	15	5	38	3	58	5	17	14	24	14	59	3	58
17	10	15	14	24	8	30	0	31	3	55	0	28	5	44	3	46	5	38	14	36	14	47	3	29
18	10	34	14	20	8	13	0	45	3	54	0	40	5	49	3	33	5	59	14	47	14	35	2	59
19	10	54	14	15	7	54	0	59	3	51	0	53	5	53	3	20	6	20	14	58	14	21	2	29
20	11	12	14	9	7	36	1	12	3	48	1	6	5	57	3	6	6	41	15	8	14	6	1	59
21	11	30	14	2	7	18	1	25	3	45	1	19	6	0	2	52	7	2	15	18	13	51	1	29
22	11	46	13	55	7	00	1	37	3	41	1	32	6	3	2	37	7	23	15	26	13	35	0	59
23	12	3	13	47	6	41	1	49	3	46	1	45	6	5	2	22	7	44	15	35	13	18	0	28
24	12	18	13	39	6	23	2	00	3	31	1	58	6	6	2	6	8	4	15	42	13	1	0	2
																							Add	
25	12	33	13	30	6	4	2	11	3	26	2	11	6	8	1	50	8	24	15	49	12	42	0	32
26	12	46	13	20	5	46	2	21	3	20	2	24	6	8	1	34	8	45	15	55	12	23	1	2
27	12	59	13	10	5	27	2	31	3	13	2	37	6	8	1	17	9	5	16	0	12	3	1	31
28	13	12	12	59	5	9	2	40	3	6	2	49	6	7	1	0	9	24	16	5	11	43	2	1
29	13	23	12	48	4	50	2	49	2	58	3	1	6	6	0	42	9	44	16	8	11	22	2	30
30	13	34			4	32	2	58	2	50	3	13	6	4	0	24	10	3	16	12	10	0	2	59
31	13	44			4	13			2	42			6	1	0	6			16	14			3	28

544 *Auxiliary Table, for finding the Equation of Time when the Sun is on the Meridian of Greenwich, on any day from the year* 1824 *till the year* 1900.

Leap Yrs.		1824	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	1900
Daily chan., of the Equation of Time.	Sec.	Sec.	Sec	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.
	5	0	0	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3
	10	0	0	1	1	1	2	2	2	2	3	3	3	4	4	4	5	5	6	6	6
	20	0	1	1	2	2	3	4	4	5	6	6	7	7	8	9	9	10	10	11	11
	30	0	1	2	3	4	5	6	6	7	8	9	10	11	12	13	14	15	15	16	16

Add the Seconds from this Table, when the Equation on the corresponding day is *increasing*.
Subtract . . . . *decreasing*.

Use of the preceding Tables.

545. Take from the first table the equation of time for the given day in the year 1824, and the daily difference of the equation, with this difference, or the nearest second to it in the side column of the Auxiliary Table, and below the leap year preceding the given year, will be found a correction, which applied to the equation before taken from the first Table, will give the equation on the given day of the leap year preceding the given year.

546. Then take ¼, ½, or ¾, of the daily difference of the equation of time, according as the given year is the 1st, 2d, or 3d after leap year, and add it to the previously found equation on the same day of the preceding leap year, when that equation is decreasing; but subtract it when increasing; and the sum or remainder will be the equation at noon, Greenwich time, of the given day.

547. If the day proposed is in leap year, correction for that year in the Auxiliary Tal applied to the equation of time on the propo day in 1824, will give the required equation.

Example.—Required the equation of ti Sept. 12, 1867, at noon, Greenwich time?

548. Equation, see the first table, 3 min. 53 s subtractive; daily difference 21 sec. nearly. table 2, opposite 20 sec. and below 1864, sta 6 sec.; which, added to 3 min. 53 sec., gi 3 min. 59 sec. the equation of time on Sept. 1864. Now, 1867 is the third year after l year; therefore, take ¾ of 21 sec. or 15 sec.: as the declination is increasing, subtract it fr 3 min. 59 sec.; and the remainder 3 min. 44 s is the required equation at Greenwich noo the given day, at noon.

549. By means of the following tables rules, the sun's declination also, at noon, Gre wich time, may be found for any day in the p sent century, to within a few seconds.

TABLE I.

550. *The Sun's Declination at Noon, Greenwich time, for every Day in the Year* 1824.

Days.	January.			February.			March.			April.			May.			June.		
	South.			South.			South.			North.			North.			North.		
1	23°	4′	43″	17°	18′	20″	7°	28′	50″	4°	38′	14″	15°	8′	49″	22°	5′	4
2	22	59	51	17	1	18	7	5	57	5	1	19	15	26	47	22	13	3
3	22	54	30	16	43	58	6	42	58	5	24	18	15	44	30	22	21	
4	22	48	43	16	26	20	6	19	54	5	47	12	16	1	58	22	28	1
5	22	42	28	16	8	26	5	56	45	6	9	59	16	19	9	22	34	5
6	22	35	46	15	50	16	5	33	31	6	32	40	16	36	5	22	41	1
7	22	28	37	15	31	49	5	10	12	6	55	14	16	52	43	22	47	1
8	22	21	2	15	13	6	4	46	50	7	17	41	17	9	5	22	52	4
9	22	13	1	14	54	8	4	23	24	7	40	0	17	25	10	22	57	5
10	22	4	33	14	34	55	3	59	55	8	2	12	17	40	57	23	2	4
11	21	55	40	14	15	28	3	36	23	8	24	15	17	56	26	23	7	
12	21	46	21	13	55	47	3	12	49	8	46	10	18	11	38	23	10	5
13	21	36	36	13	35	52	2	49	13	9	7	57	18	26	31	23	14	2
14	21	26	27	13	12	43	2	25	35	9	29	34	18	41	5	23	17	3
15	21	15	53	12	55	22	2	1	56	9	51	1	18	55	21	23	20	1
16	21	4	54	12	34	49	1	38	15	10	12	20	19	9	18	23	22	3
17	20	53	32	12	14	3	1	14	34	10	33	28	19	22	55	23	24	2
18	20	41	45	11	53	6	0	50	52	10	54	26	19	36	13	23	25	5
19	20	29	35	11	31	57	0	27	11	11	15	13	19	49	11	23	26	5
20	20	17	2	11	10	37	0	3	29 S	11	35	49	20	1	49	23	27	3
21	20	4	5	10	49	7	0	20	12 N	11	56	14	20	14	6	23	27	4
22	19	50	47	10	27	27	0	43	51	12	16	27	20	26	3	23	27	3
23	19	37	6	10	5	37	1	7	30	12	36	29	20	37	39	23	27	
24	19	23	3	9	43	37	1	31	6	12	56	18	20	48	54	23	26	
25	19	18	39	9	21	29	1	54	41	13	15	54	20	59	47	23	24	3
26	18	53	53	8	59	13	2	18	13	13	35	18	21	10	19	23	22	4
27	18	38	47	8	36	48	2	41	43	13	54	28	21	20	29	23	20	2
28	18	23	21	8	14	16	3	5	9	14	13	25	21	30	17	23	17	
29	18	7	34	7	51	36	3	28	31	14	32	7	21	39	42	23	14	
30	17	51	28				3	51	50	14	50	35	21	48	45	23	11	
31	17	35	3				4	15	5				21	51	21			

TABLE I.—(*Continued*).

JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
North.	North.	North.	South.	South.	South.
23° 7′ 22″	18° 0′ 0″	8° 13′ 41″	3° 16 6″	14° 31′ 21″	21° 52′ 6″
23 3 4	17 44 41	7 51 48	3 39 24	14 50 26	22 1 7
22 58 23	17 29 5	7 29 48	4 2 39	15 9 17	22 9 43
22 53 17	17 13 12	7 7 40	4 25 52	15 27 53	22 17 53
22 47 28	16 57 2	6 45 25	4 49 1	15 46 13	22 25 36
22 41 55	16 40 36	6 23 3	5 12 7	16 4 18	22 32 54
22 35 38	16 23 54	6 0 35	5 35 9	16 22 7	22 39 45
22 28 58	16 6 56	5 38 2	5 58 6	16 39 39	22 46 10
22 21 54	15 49 43	5 15 22	6 20 59	16 56 54	22 52 7
22 14 28	15 32 14	4 52 38	6 43 46	17 13 52	22 57 38
22 6 38	15 14 31	4 29 48	7 6 29	17 30 32	23 2 41
21 58 26	14 56 32	4 6 53	7 29 5	17 46 54	23 7 17
21 49 51	14 38 19	3 43 54	7 51 36	18 2 58	23 11 25
21 40 53	14 19 53	3 20 51	8 14 0	18 18 43	23 15 6
21 31 54	14 1 12	2 57 44	8 36 18	18 34 9	23 18 19
21 21 52	13 42 18	2 34 33	8 58 28	18 49 15	23 21 3
21 11 49	13 23 11	2 11 19	9 20 31	19 4 1	23 23 20
21 1 24	13 3 51	1 48 3	9 42 25	19 18 26	23 25 9
20 50 37	12 44 18	1 24 44	10 4 12	19 32 31	23 26 29
20 39 29	12 24 33	1 1 22	10 25 49	19 46 15	23 27 21
20 28 1	12 4 36	0 37 59	10 47 17	19 59 36	23 27 45
20 16 11	11 44 28	0 14 35 N	11 8 36	20 12 36	23 27 40
20 4 2	11 24 8	0 8 50S	11 29 45	20 25 14	23 27 7
19 51 32	11 3 37	0 32 16	11 50 43	20 37 28	23 26 6
19 38 42	10 42 56	0 55 43	12 11 30	20 49 20	23 24 36
19 25 32	10 22 5	1 19 0	12 32 6	21 0 48	23 22 38
19 12 4	10 1 3	1 42 35	12 52 31	21 11 53	23 20 12
18 58 16	9 39 53	2 6 0	13 12 43	21 22 33	23 17 17
18 44 9	9 18 33	2 29 24	13 32 42	21 32 49	23 13 55
18 29 44	8 57 4	2 52 46	13 52 29	21 42 40	23 10 5
18 15 1	8 35 27		14 12 2		23 5 47

551. TABLE II.

e the Sun's Declination from Table I, to the Noon of any Day, Greenwich Time, till the Year 1900.

of 4 Yrs.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
rs.	1824	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	1900
Diff. ’s n.	Correction. Subtraction.																			
1′	0″	2″	4″	6″	8″	10″	12″	14″	16″	18″	20″	22″	24″	26″	28″	30″	32°	34″	36″	38′
7	0	2	4	6	7	9	11	13	15	17	19	21	24	26	27	29	31	33	35	37
1	0	1	3	4	5	6	8	10	11	12	14	16	18	20	21	23	24	26	27	28
	0	1	2	3	5	6	7	9	10	11	12	13	14	15	17	18	19	20	21	22
1	0	1	2	2	3	4	5	6	6	7	8	9	10	11	12	13	14	15	15	16
3	0	0	1	1	1	2	2	3	3	3	4	4	4	5	5	6	6	6	6	7

USE OF THE PRECEDING TABLES.

552. To find the sun's declination on any day. Take from table I. the declination for the noon of the corresponding day in the year 1824, and the daily change of the declination. Opposite that daily change, in table II. and below the leap-year preceding the given one, will be found the first correction of the declination.

553. Multiply the seconds in the daily changes of declination, by the period of four years in table II. and parts of a period from 1824, to the given year, and the product multiplied by ·0308 will give the seconds, in the second correction of the declination.

554. Lastly, take ¼, ½, or ¾, of the daily change of declination, according as the year is the first, second, or third after leap-year, and the result will be the third correction of the declination.

555. Subtract the first correction from the declination on the corresponding day of 1824, add the second correction, when the declination is increasing, and subtract it when decreasing; and apply the third in a manner contrary to the second, and the result will be the declination at noon, Greenwich time, of the proposed day.—*Note.*—If the given year be leap-year, the thi correction is nothing.

Example.—Required the sun's declination noon, Greenwich time, Oct. 18, 1875?

556. By table I. the sun's declination on O 18, 1824, is 9° 42′ 25′ S., and daily chan 21′ 47″, increasing. Now the leap-year pr ceding the given one, is 1872, below which, table II. and opposite 22′ (the nearest minute the daily change) stands 7′, the first correction. the given year is the third after leap-year, and the are (see table II.) 12 periods of 4 years from 18 to 1872, there are 12¾ periods from 1824 to 187 Hence, 12¾ × ·0308 × 1307″ (21′ 47″)=513″ 8·33′, the second correction, addition, becau the declination is increasing. As the giv year is the third after leap-year, we have ¾ 21′ 47″=16′ 19″, the third correction, subtra tion, because the second is addition. Hen the declination at the proposed time, is 9° 42′ 2 —7″+8′ 33″—16′ 19″=9° 34′ 34″.

557. As immediately connected with this su ject, we add a table of the sun's right ascensi for the year 1824, with a method of adapting to any subsequent instant in the present centu with sufficient exactness for ordinary purpose

558. *Table of the Sun's Right Ascension, at Noon, Greenwich Time, for every Day in the Year 18*

DAYS.	JANUARY			FEBRUARY.			MARCH.			APRIL.			MAY.			JUNE.		
	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
1	18	43	58	20	56	30	22	49	34	0	43	5	2	34	20	4	37	[illegible]
2	18	48	24	21	0	35	22	53	18	0	46	43	2	38	9	4	41	[illegible]
3	18	52	48	21	4	39	22	57	2	0	50	22	2	41	59	4	45	[illegible]
4	18	57	13	21	8	42	23	0	45	0	54	0	2	45	49	4	49	[illegible]
5	19	1	37	21	12	44	23	4	28	0	57	39	2	49	40	4	53	[illegible]
6	19	6	1	21	16	46	23	8	11	1	1	18	2	53	32	4	57	[illegible]
7	19	10	24	21	20	46	23	11	52	1	4	57	2	57	24	5	1	[illegible]
8	19	14	47	21	24	46	23	15	34	1	8	37	3	1	16	5	5	[illegible]
9	19	19	9	21	28	45	23	19	15	1	12	16	3	5	9	5	10	[illegible]
10	19	23	30	21	32	43	23	22	56	1	15	56	3	9	3	5	14	[illegible]
11	19	27	51	21	36	40	23	26	36	1	19	36	3	12	57	5	18	[illegible]
12	19	32	12	21	40	37	23	30	16	1	23	16	3	16	52	5	22	[illegible]
13	19	36	31	21	44	32	23	33	56	1	26	57	3	20	48	5	26	[illegible]
14	19	40	50	21	48	27	23	37	36	1	30	38	3	24	43	5	30	[illegible]
15	19	45	9	21	52	21	23	41	15	1	34	19	3	28	40	5	34	[illegible]
16	19	49	27	21	56	15	23	44	54	1	38	1	3	32	37	5	39	[illegible]
17	19	53	44	22	0	7	23	48	33	1	41	43	3	36	35	5	43	[illegible]
18	19	58	0	22	3	59	23	52	11	1	45	25	3	40	33	5	47	[illegible]
19	20	2	16	22	7	51	23	55	50	1	49	8	3	44	32	5	51	[illegible]
20	20	6	31	22	11	41	23	59	28	1	52	52	3	48	31	5	55	[illegible]
21	20	10	45	22	15	31	0	3	6	1	56	35	3	52	31	5	59	[illegible]
22	20	14	59	22	19	21	0	6	44	2	0	20	3	56	32	6	3	[illegible]
23	20	19	11	22	23	9	0	10	22	2	4	4	4	0	33	6	8	[illegible]
24	20	23	23	22	26	57	0	14	0	2	7	49	4	4	35	6	12	[illegible]
25	20	27	34	22	30	45	0	17	38	2	11	35	4	8	37	6	16	[illegible]
26	20	31	45	22	34	32	0	21	16	2	15	21	4	12	39	6	20	[illegible]
27	20	35	55	22	38	18	0	24	54	2	19	8	4	16	43	6	24	[illegible]
28	20	40	3	22	42	4	0	28	32	2	22	55	4	20	46	6	28	[illegible]
29	20	44	11	22	45	49	0	32	10	2	26	43	4	24	50	6	33	[illegible]
30	20	48	19				0	35	48	2	30	31	4	28	55	6	37	[illegible]
31	20	52	25				0	39	27				4	33	0			

Table of Sun's Right Ascension—(Continued).

DAYS.	JULY.			AUGUST.			SEPTEMBER.			OCTOBER.			NOVEMBER.			DECEMBER.		
	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
1	6	41	21	8	46	8	10	42	10	12	30	14	14	26	34	16	30	29
2	6	45	29	8	50	1	10	45	47	12	33	52	14	30	30	16	34	49
3	6	49	37	8	53	53	10	49	25	12	37	30	14	34	26	16	39	9
4	6	53	45	8	57	44	10	53	2	12	41	8	14	38	24	16	43	30
5	6	57	52	9	1	33	10	56	38	12	44	47	14	42	28	16	47	52
6	7	1	58	9	5	25	11	0	15	12	48	26	14	46	21	16	52	14
7	7	6	5	9	9	15	11	3	51	12	52	5	14	50	21	16	66	36
8	7	10	11	9	13	4	11	7	27	12	55	45	14	54	22	17	0	39
9	7	14	16	9	16	53	11	11	3	12	59	25	14	58	23	17	5	23
10	7	18	22	9	20	40	11	14	39	13	3	6	15	2	26	17	9	47
11	7	22	26	9	24	28	11	18	15	13	6	47	15	6	29	17	14	11
12	7	26	31	9	28	14	11	21	50	13	10	29	15	10	33	17	18	36
13	7	30	34	9	32	1	11	25	26	13	14	11	15	14	38	17	23	1
14	7	34	38	9	35	46	11	29	1	13	17	54	15	18	44	17	27	26
15	7	38	41	9	39	32	11	32	37	13	21	37	15	22	51	17	31	58
16	7	42	43	9	43	16	11	36	12	13	25	21	15	26	58	17	36	18
17	7	46	45	9	47	0	11	39	48	13	29	5	15	31	7	17	40	44
18	7	50	47	9	50	44	11	43	23	13	32	50	15	35	16	17	45	11
19	7	54	47	9	54	27	11	46	59	13	36	36	15	39	27	17	49	37
20	7	58	48	9	58	10	11	50	34	13	40	23	15	43	38	17	54	4
21	8	2	48	10	1	52	11	54	10	13	44	10	15	47	50	17	58	31
22	8	6	47	10	5	34	11	57	46	13	47	57	15	52	2	18	2	58
23	8	10	46	10	9	15	12	1	21	13	51	46	15	56	16	18	7	24
24	8	14	44	10	12	56	12	4	57	13	55	35	16	0	30	18	11	51
25	8	18	42	10	16	37	12	8	34	13	59	25	16	4	45	18	16	18
26	8	22	39	10	20	17	12	12	16	14	3	15	16	9	1	18	20	44
27	8	26	35	10	23	57	12	15	46	14	7	6	16	13	17	18	25	11
28	8	30	31	10	27	36	12	19	23	14	10	58	16	17	34	18	29	37
29	8	34	26	10	31	15	12	23	0	14	14	51	16	21	52	18	34	3
30	8	38	21	10	34	53	12	26	37	14	18	45	16	26	10	18	38	29
31	8	42	15	11	38	32				14	22	39				18	42	54

559. To find the sun's higher ascension at the noon of any day, Greenwich time, till the year 1900.

Take the right ascension for the corresponding day of the year 1824 from the above table, and multiply 7·3s. by the periods of four years, and parts of a period from 1824 till the given period, and the product will be the period in the first correction, always to be added. Take ¼, ½, or ¾ of the daily change of right ascension, according as the given year is the first, second, or third after leap-year; for the second correction always to be subtracted. Apply these corrections to the right ascension taken for the corresponding day of 1824, and the result will be the right ascension at the Greenwich noon of the proposed day.

Note.—If the given year is a leap-year, the second correction is nothing.

EXAMPLE.

Required the sun's right ascension, May 4, 1853.

560. The sun's right ascension, May 4, 1824, is 2h. 45m. 49s and daily increase 3m. 51s. Now there are 7¼ periods of four years from 1824 till 1853; when 7·3s. × 7¼ = 53s. the first correction; and ¼h. of 3m. 51s. in 58s., the second correction. Then 2h. 48m. 55d. ×53s. —58s. = 2h. 45m. 40s. the right ascension at the proposed time.

SECT. III.—OF CALCULATING THE DISTANCES, MAGNITUDES, &c OF THE CELESTIAL BODIES.

561. One of the first objects of an observer is to ascertain the latitude of his place of observation. There are many methods by which this may be effected. If the declination δ of any celestial object be known, and its distance z from the zenith be observed, then the latitude l will be either $= \overline{\delta + z}$, or $\overline{\delta - z}$, according as δ and z are of the same or different denominations. But the latitude may be determined from altitudes of circumpolar stars, independently of any previous knowledge of the places of those stars, for it is always equal to half the sum of their greatest and least altitudes. The pole star is most conveniently situated for observations of this kind, and it is generally observed for that purpose.

562. Considerable attention has been paid to the simplification of the method by which the latitude may be found from altitudes of this star when it is out of the meridian. Mr. F. Bailey the present learned president of the Astronomical Society of London, has given the following formula, in which ψ is the colatitude, p the star's

polar distance, and t its meridian distance, and z its observed zenith distance, $\psi = z - \frac{p^2}{2} m^2 t . \cot. z + p \cos. t + \frac{p^3}{3} \sin{}^2 t \cos. t$. This formula may be put under the form $\psi = z + (p + C) \cos. t - B \cot. z$; whence, the coefficients $p +$ C and B being computed and arranged in tables, ψ may easily be determined.

563. The latitude being determined, it becomes next of importance to determine the inclination of the plane of the earth's orbit to the plane of the equator, or the obliquity of the ecliptic. This is the difference between the sun's greatest altitude and the colatitude of the plan of observation. If the sun was in the solstice at the moment at which he was on the meridian, the difference between his meridian altitude and the colatitude, would be the obliquity. This, however, is unlikely to happen, and, on the ground of utility, not at all to be desired; as, from meridional observations made near the solstice, the obliquity may be determined with a degree of accuracy to which no single observation could justify us in pretending.

564. If w be the obliquity, d the sun's declination, and $\odot$ his longitude, d' the greatest declination, and $\odot'$ the corresponding longitude; then,

$$\sin. d = \sin. \odot . \sin. w$$
$$\sin. d = \sin. \odot' . \sin. w.$$

When $\sin. d' - \sin. d = \sin. w (\sin. 90^\circ - \sin. \odot)$ Or, if $w = 90^\circ - \odot$ and $w (= d') = d + \delta$, $\sin. \frac{\delta}{2} \cos. (w - \frac{\delta}{2}) = \sin. w . \sin.^2 \frac{u}{2}$. And expanding and substituting for $m \frac{\delta}{2}$ and $\cos. \frac{\delta}{2}$ their approximate values in terms of δ, we obtain

$$\delta = \frac{\tan. w . \sin. s' . u^2}{2}$$

from which, with the greatest ease, the correction of the declination d deduced from the altitude may be obtained, and hence from a series of meridional altitudes, observed on each side of the solstice, the obliquity of the ecliptic may be obtained to a very great degree of nicety.

565. The obliquity of the ecliptic being obtained, the next step in this department of enquiry is to ascertain the place of the equinoctial point, or that point on the ecliptic in which it crosses the equator. Now the point in which the sun is when his meridional altitude is equal to the colatitude, will be the equinoctial point. Let $a =$ his meridional altitude less than the colatitude l, $a' =$ his meridional altitude greater than l, and $n =$ the days between the two observations, then as near the equinox a may be considered as varying uniformly, we have $\frac{a - l, n}{a' - a} =$ the time after the sun had the altitude a when he was on the equator, whence his place at the time on the portion of the equinoctial point, with reference to the meridian of any known fixed star may be determined.

566. The distances of the heavenly bodies are obtained by finding the horizontal parallax of the body whose distance is desired to be known; that is, the angle under which the semidiameter of the earth would appear provided we could see it from that body. In general the parallax of a planet is the difference between the real and apparent place of a planet; that is, between its place seen from some part of the surface, and from the centre of the earth; so that the parallax is the angle under which the semidiameter of the earth, terminated by the place of an observer, is seen at the planet; and to find this parallax many methods have been devised.

567. I. Let A D, plate V. fig. 3, be the earth, C its centre, P the planet; and let the planet's distance C P from the centre of the earth be given. Then Z A P is the complement of the apparent altitude, Z C P the complement of the true altitude. As the planet's distance from the centre of the earth C P : to the earth's radius AC : : so is the cosine of the apparent altitude, S.Z A P : to the sine of the parallax. For draw A F parallel to C P. The angle F A P is equal to the angle A P C. But Z A F is equal to Z C P, the true zenith distance, and Z A P is the apparent zenith distance; and their difference F A P, or its equal A P C, is the parallax. But in the triangle C A P, it is C P : S.C A P or Z A P : : C A : S.C P A, or P A F, the parallax.

568. II. If the distances of two planets or stars, having the same apparent altitude, be known, and the parallax of one of them, let P and G be the planets in the line A P G; then A P C is the parallax of P, and A G C the parallax of G. Therefore in the triangle C P C, we have C P, C G, and an angle opposite, suppose G, to find the other opposite angle. Therefore distance C P : distance C G : : S C G P : S C P G or C P A; that is, the sines of the parallaxes are reciprocally as the distances from the earth's centre.

569. III. Let S be the star or planet whose parallax is sought. See plate V. fig. 7. Observe it when it is in the same vertical circle with any two fixed stars, A, B. Observe again when the same two stars come into a position parallel to the horizon at a and b; and let the planet become to s. Then with an instrument measure the altitude of a or b, and likewise the altitude of s; and the difference of these altitudes is the parallax. For the real place of the star S, is somewhere in the line A B, and therefore it is also somewhere in the line a b, and therefore its altitude is the same as that of a or b. Therefore the parallax is the difference of the altitudes of a and s, or of b and s.

570. IV. Let S be the star or planet; observe its distance from any fixed star B, which is in the same vertical circle Z S B; and measure the distance S B with an instrument. Then observe again when the same two stars have equal altitudes above the horizon at b and s, and then take the distance b s, This distance will be very near the true distance of the stars B and S; therefore the first distance B S subtracted from the latter distance b s, when B is below S, gives the parallax or the latter distance subtracted from the former when B is above S, gives the parallax.

571. V. The parallax may be found by observing the azimuth and altitude of the star or planet. Let H Z O, plate V. fig. 4, be the meridian, E the equinoctial, H O the horizon, Z the zenith, P the pole, S the star, Z S B a vertical circle pass-

ing through it. Observe the altitude B S, and the azimuth B O, and mark the moment of time when these observations are made; then observe the moment of time that the star comes to the meridian, and you then have the distance of time from the observations. Convert this into degrees, allowing only 23h. 56m. to 360°, (which is the time of the earth's rotation to the same star), and you have the arch E D or angle E P A, supposing P A D an hour circle. Therefore in the spherical triangle Z P A, we have the angle Z P A, and angle P Z A equal to B O, and the side Z P the co-latitude, to find the side Z A the complement of the altitude; this subtracted from Z S, known by observation, the remainder A S is the parallax.

572. VI. Another method is performed by a telescope, with cross hairs in the focus. Direct the telescope to the planet, and turn it round till its motion is along one of the cross hairs, which represents part of the planet's parallel circle; and the other hair perpendicular to it, will represent its hour circle. Observe the time when the planet comes to this hour circle, there fix the telescope, and then take its altitude; then observe the time when some fixed star, whose right ascension is known, comes to the same hour circle. The difference of time between the planet and star coming to this hour circle, turned into degrees (allowing 360° to 23h. 56m.), gives the difference of right ascensions of the planet and star; and so the apparent right ascension of the planet is known.

573. When the planet comes to the meridian, observe it with the telescope, and note the time; and when the star comes to the meridian, note the time of that: then the difference of the times reduced to degrees as before, gives the true difference of right ascensions, whence the true right ascension of the planet will be known. Therefore let H O, plate V. fig. 8, be the horizon, H Z O the meridian, Z the zenith, P the pole, A the true place of the planet, S its apparent place, Z S B a vertical circle; then in the triangle Z P S, we have Z P, Z S, and angle Z P S to find the angle P Z S. In the triangle Z P A, we have Z P, angles Z P A, P Z A; to find Z A, which taken from Z S, gives A S the parallax.

574. If the planet have a proper motion of its own, its true place will be always changing; and therefore the change of place must be computed for the time of the observations. This is done by observing its place when in the meridian, twice; and thence the change of place is had for 24 hours: and therefore the place at the times of observations will be had by proportioning the motion according to the times. Here the angle Z P S should be about 90°, to have A P S the greatest possible.

575. VII. The operation represented in plate V. fig. 5, requires two observers in different places of the earth, and can be applied to none of the planets but Mars in opposition to the sun, or to Venus on the sun's disk. It is best performed when the sun is about the equinox. Let P E R Q be the earth, P R its axis, E Q the equinoctial, S the planet Mars in opposition to the sun, and if near the perihelion, it is better. Let two places F G, be taken, the one in north latitude, the other in south latitude, the further from the equinoctial the better; and nearly in the same meridian, or rather so placed, that the line F G, drawn from the one to the other, may be nearly perpendicular to the orbit of Mars. By this there is a greater base to work upon. Then let the two observers pitch upon some fixed star as A, which Mars comes very near at that time; and the nearer the better. Having two good instruments perfectly alike, furnished with micrometers, and being situated at F and G; let them observe for several nights successively about midnight, the places of Mars at B and C, as he passes by the star A; and take the distances A B and A C every night, during his transit by this star. These observations are to be continued till the distances begin to increase, and no longer; for then he is past the star.

576. From these observations, the nearest distance of Mars from the star A may be found, as observed from the places F and G; at least they may be found by interpolation. Let these nearest distances be A B and A C; then we have the difference B C, or the angle B S C or F S G. And from the situation of the places F and G, the length and position of F G will be known; and by these F S may be found. And lastly, the angle which the radius of the earth subtends at the distance F S, or the horizontal parallax of Mars will be known. If, instead of Mars in opposition, Venus be observed on the body of the sun; then her nearest distances from either limb of the sun must be taken, whose difference will give the angle at Venus, subtended by F G; the rest as before. Thus the parallax of Venus will be obtained. The parallax of Mars, when nearest the earth, has been found 25″, 27″, and 30″ at different times.

577. Besides these methods of computing the parallax, there is another depending on observations made out of the meridian, which may be thus explained: let M, plate IV. fig. 5, be the true place, and m the apparent place of a planet, Z the zenith, and P the pole, then M P m will represent the apparent change in the right ascension of the planet arising from parallax. This change may be thus estimated: make $Pn = PM$, and join Mn, $MPn = Mn$ cosect $MP = Mm$ sin. ZMP cosect $PM = A$ sin. ZM. sin. ZMP cosect PM (A representing the horizontal parallax) $= A$ sin. ZP sin. ZPM cosect PM.

$$\text{Hence } A = \frac{MPn}{\sin. ZP \cdot \sin. ZPM \cdot \text{cosect } PM} = \frac{MPn \cos. \text{declin.}}{\cos. \text{lat. } \sin. \text{ hour angle}}.$$

$$\text{Or, calling } MPm, \epsilon,\ A = \frac{\epsilon \cos. \text{declin.}}{\cos. \text{lat.} \sin \text{ hour angle.}}.$$

We should have a similar expression for it, if the object were observed on the other side of the meridian, and therefore

$$A = \frac{\epsilon \cos. \text{declin.}}{\cos. \text{lat.} \times (\sin. h + \sin. h')} = \frac{\epsilon \cos. \text{declin.}}{2 \cos. \text{lat.} \sin. \frac{h + h'}{2} \cos. \frac{h - h'}{2}}$$

This method serves tolerably well to find the parallax of the moon; and it has been applied successfully to find the parallax of Mars; but it requires observations of much too great nicety to determine by it the parallaxes of the two planets. Those are chiefly deduced from the parallax of the sun, as determined by the transit of Venus.

578. In the above investigations, the earth has been considered as a spherical body; but in computing the parallax of the moon, from observations, the peculiarity of the form of the earth becomes very apparent; and it is a striking circumstance that from the eclipses of the moon, we shew in a general way that the earth is round, and from her parallaxes that it is not spherical.

579. A star or planet appears lower than it really is, by the quantity of the parallax, which is greater the lower the star is; and therefore the horizontal parallax is the greatest. The parallaxes of two planets are as the cosines of the apparent altitudes directly, and their distances from the earth's centre reciprocally. For when the distance is given, the parallax is as the sine of the zenith distance (by method 1), and if the apparent altitude be given, the parallax is reciprocally as the distance, (by method 2), and therefore is in a compound ratio, when neither is given. Here the parallax being very small, one may take the parallax itself for the sine of the parallax.

580. The parallax of a planet being known, its distance may be found. For this is only working backward, saying, as sine of the parallax, to the earth's radius; so S zenith distance to the planet's distance.

581. Having the parallax of any of the planets, the distances of all the planets from the sun may be known, in diameters of the earth, or any sort of measure. For the distances of the planets from the sun and from one another, are known in some assumed measure; and by the parallax of a planet, the true distance of the earth from it is known; and therefore all the other distances will be known by proportion.

582. The seventh of these methods has been practised in determining the parallax of Venus, from observations made at different parts of the earth, upon what is called her transit over the sun's disk, a phenomenon that rarely happens: but when it does happen, it affords the best, and indeed the only accurate method of determining that most important problem in astronomy, the sun's parallax, or the angle under which the earth's semi-diameter appears from the sun.

583. The first transit or passage of Venus over the sun's disk, that ever was observed, happened in 1639, but perhaps the only mortals who saw it were Mr. Horrox and his friend Mr. Crabtree. Two transits have happened since; the first in 1761, and the last in 1769. There will be no more before 1874, and the next to that will happen in 1996. The two last transits were carefully observed. From the first of these Mr. Short has computed the sun's parallax to be 8·69″; and from the last the best astronomers have concluded it to be 8·6″. This is an observation of the greatest consequence, because it is only by a knowledge of the sun's distance from the earth, in some known measure, that we can acquire a knowledge of the true dimensions of the solar system. Fo an account of the principles of this method o finding the solar parallax, see VENUS, transit o

584. As to the fixed stars, no method of ascertaining their distance has hitherto been foun out. Those who have formed conjectures concerning them, have thought that they were a least 400,000 times farther from us than we ar from the sun.

585. Dr. Herschel has proposed a method o ascertaining the parallax of the fixed stars, something similar, but more complete, than that mentioned by Galileo and others; for it is by th parallax of the fixed stars that we should b best able to determine their distance. The method pointed out by Galileo, and first attempte by Hooke, Flamsteed, Molineux, and Bradley of taking the distances of stars from the zenit that pass very near it, has given us a much juste idea of the immense distance of the stars, an furnished us with an approximation to the knowledge of their parallax, that is much nearer th truth than we ever had before.

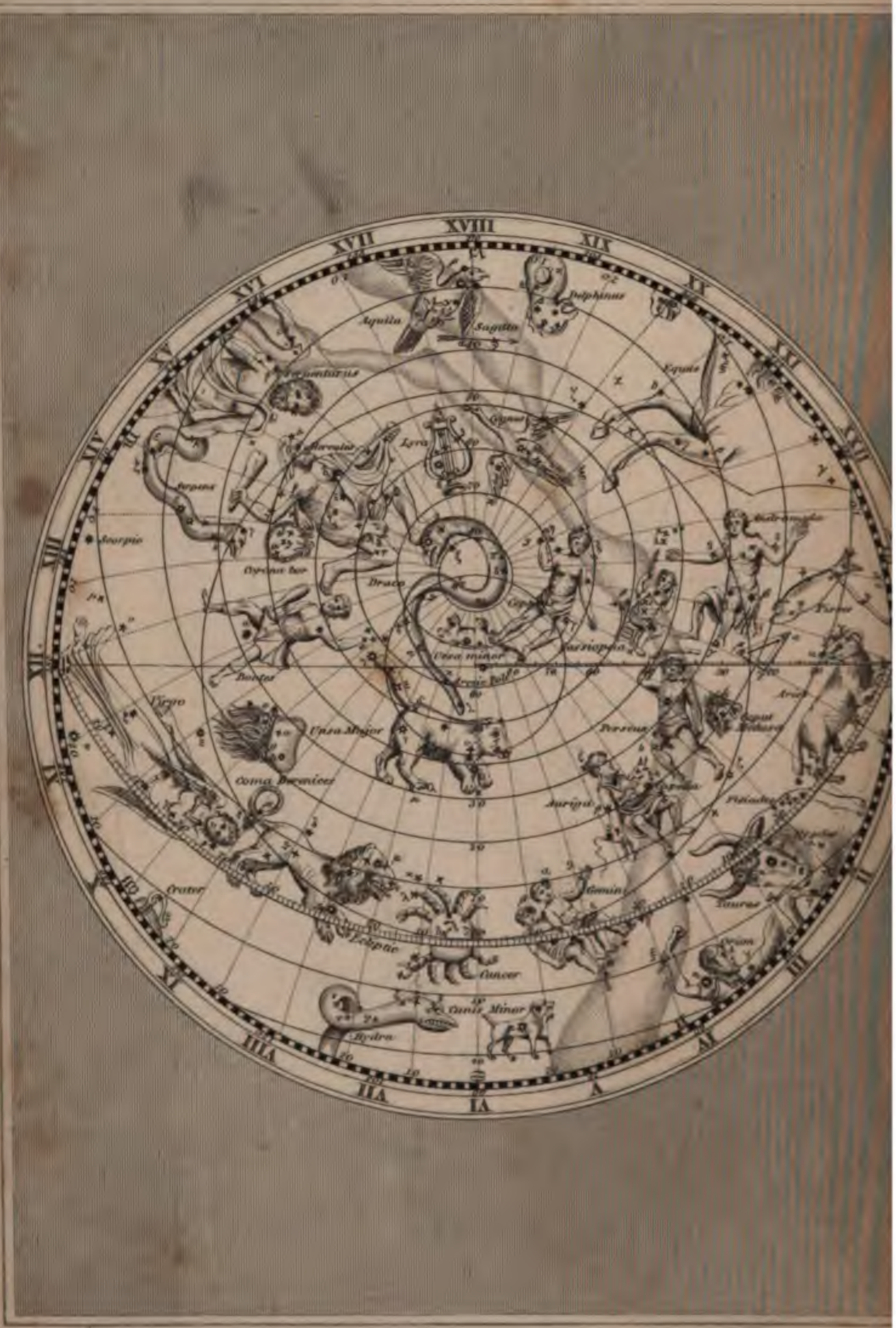
586. But Herschel mentions the insufficiency of their instruments, which were similar to the present zenith sectors, the method of zenith distances being liable to considerable errors on account of refraction, the change of position of the earth's axis arising from nutation, precession of the equinoxes, and other causes, and the aberration of light. The method of his own is by means of double stars; which is exempted from these errors, and of such a nature that the annual parallax, even if it should not exceed the tenth part of a second, may still become more visible, and be ascertained, at least to a much greater degree of approximation than it has ever been done.

587. This method is capable of every improvement which the telescope and mechanism of micrometers can furnish; but as it goes on presumptions which can hardly lead to any firm conviction, we are not likely to gain any farther knowledge, than that the stars are at too great distance to be subjected as yet to our calculations. He supposes that the stars are, one with another, about the size of the sun; and that the difference of their apparent magnitudes is owing to their apparent distances; both of which suppositions being only hypothetical, it is evident that the conclusions founded on them cannot be depended on with absolute certainty.

588. Considerable discussion has recently taken place between Mr. Pond, the present astronomer royal, and Dr. Brinkley, respecting the annual parallax of *a* Lyræ, which parallax Dr. B. conceives his instrument shews clearly to be about 1·12″. Mr. Pond, asserts, that the Greenwich circle is a better instrument than the Dublin circle, and that observations made with it give no indications of parallax either in *a* Lyræ, or in any other fixed star. Dr. Brinkley, however, has endeavoured to shew that, if the place of the pole-star can be relied on, the Greenwich observations do indicate a parallax in *a* Lyræ very nearly equal to that shewn by his instrument; but Mr. Pond, in a recent communication to the astronomical society of London, states, that observations on the pole-star are on the whole more unsatisfactory than any other star. What

ASTRONOMY.

NORTHERN HEMISPHERE.



J.S

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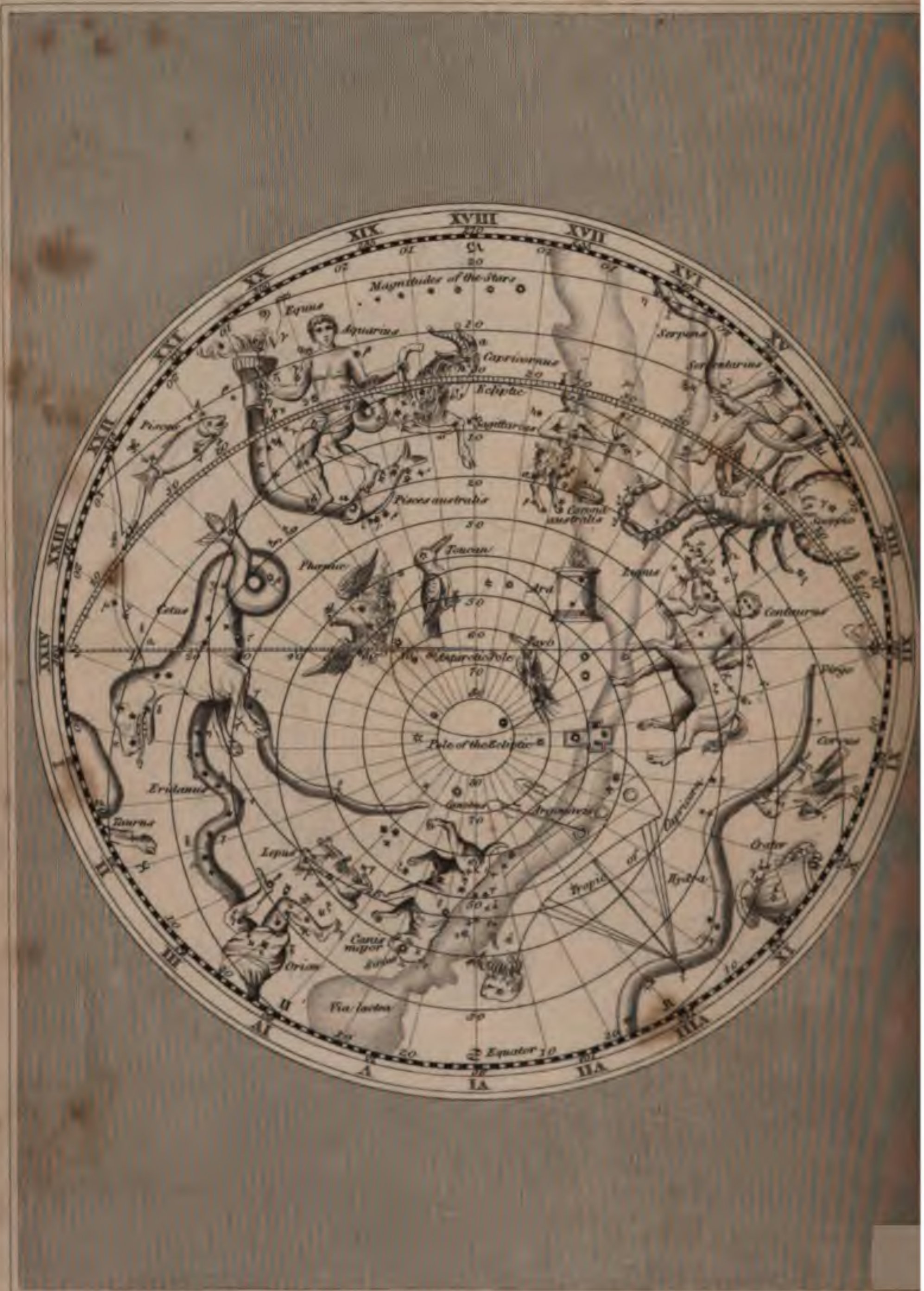
PLATE II.

ASTRONOMY.

SOUTHERN HEMISPHERE.



J. Shury

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eems to go far towards settling this delicate uestion is, that there are now two circles in onstant use at Greenwich; and that they agree gether in a manner that must be gratifying to eir distinguished makers, Mr. Troughton d Mr. Thomas Jones; they bear steady and ited testimony against the parallax of the fixed s, and shew even in some instances a ten- cy to exhibit a deviation of an opposite racter.

ct. IV.—Of the Divisions of the Starry Heavens.

89. The stars, from their apparently various nitudes, have been distributed into several ses, or orders. Those which appear largest, called stars of the first magnitude; the next hem in lustre, stars of the second magnitude; so on to the sixth, which are the smallest that visible to the bare eye. This distribution ng been made long before the invention of copes, the stars which cannot be seen with- the assistance of these instruments, are dis- ished by the name of telescopic stars.

0. The ancients divided the starry sphere particular constellations, or clusters of stars, rding as they lay near one another, so as to py those spaces which the figures of diffe- sorts of animals or things would take up, ey were there delineated. And those stars h could not be brought into any particular tellation, were called unformed stars.

591. By this division, the stars are so distinguished from one another, that any particular star may be readily found in the heavens, by means of a celestial globe; on which the constellations are so delineated, that the most remarkable stars are placed in such parts of the figures, as are most easily distinguished. See plates I, and II.

592. The number of the ancient constellations is forty-eight, and upon our present globes about seventy. On Senex's globes are inserted Bayer's letters; the first in the Greek alphabet being put to the largest star in each constellation, the second to the next, and so on; by which means every star is as easily found as if a name were given to it. Thus if the star γ in the constellation of the ram be mentioned, every astronomer knows as well what star is meant, as if it were pointed out to him in the heavens.

593. The starry heavens are also divided into three parts, viz. 1. The Zodiac, which extends quite round the heavens; is about 16° broad, so that it takes in the orbits of all the planets, as well as that of the moon; and along the middle of which is the ecliptic. 2. All that region of the heavens which is on the north side of the zodiac, containing twenty-one constellations; and, 3. That on the south side, containing fifteen.

594. The following tables exhibit the names of the ancient and modern constellations, and the number of stars observed in each of them by different astronomers:

595. TABLE I.

THE ANCIENT CONSTELLATIONS.

Names.	English Names.	Number of Stars in Each, according to			
		Ptolemy.	T. Brahe.	Hevelius.	Flamst.
Minor	The Little Bear	8	7	12	24
Major	The Great Bear	35	29	73	87
co	The Dragon	31	32	40	80
beus	Cepheus	13	4	51	35
es, or Arctophilax		23	18	52	54
ona Borealis	The Northern Crown	8	8	8	21
cules, or Engonasin	Hercules Kneeling	29	28	45	113
a	The Harp	10	11	17	21
nus, or Gallina	The Swan	10	18	47	81
siopeia	The Lady in her Chair	13	26	37	55
eus	Perseus	29	29	46	59
iga	The Waggoner	14	9	40	66
entarius, or hiuchus	Serpentarius	29	15	40	74
ens	The Serpent	18	13	22	64
tta	The Arrow	5	5	5	18
ila, or Vultur	The Eagle	15	12	23	71
noos	Antinous	15	3	19	71
phinus	The Dolphin	10	10	14	18
ulus, or Equi sectio	The Horse's Head	4	4	6	10
asus, or Equus	The Flying Horse	20	19	38	89
romeda	Andromeda	23	23	47	66
ngulum	The Triangle	4	4	12	16
s	The Ram	18	21	27	66
rus	The Bull	44	43	51	141
ini	The Twins	25	25	38	85

TABLE I.—(*Continued*).

Names.	English Names.	Number of Stars in Each, according to			
		Ptolemy.	T. Brahe.	Hevelius.	Flamst.
Cancer	The Crab . . .	23	15	29	83
Leo	The Lion	35	30	49	95
Comæ Berenices .	Berenice's Hair . .	35	14	21	43
Virgo	The Virgin . . .	32	33	50	110
Libra, or Chelæ .	The Scales . . .	17	10	20	51
Scorpius	The Scorpion . .	24	10	20	44
Sagittarius . . .	The Archer . . .	31	14	22	69
Capricornus . . .	The Goat	28	28	29	51
Aquarius	The Water-Bearer .	45	41	47	108
Pisces	The Fishes . . .	38	36	39	113
Cetus	The Whale . . .	22	21	45	97
Orion	Orion	38	42	62	78
Eridanus, or Fluvius	Eridanus, or the River	34	10	27	84
Lepus	The Hare	12	13	16	19
Canis Major . . .	The Great Dog . .	29	13	21	31
Canis Minor . . .	The Little Dog . .	2	2	13	14
Argo Navis . . .	The Ship	45	3	4	64
Hydra	The Hydra . . .	27	19	31	60
Crater	The Cup	7	3	10	31
Corvus	The Crow . . .	7	4		9
Centaurus . . .	The Centaur . . .	37			35
Lupus	The Wolf	19			24
Ara	The Altar . . .	7			9
Corona Australis .	The Southern Crown	13			12
Piscis Australis .	The Southern Fish .	18			24

596. TABLE II.
THE NEW SOUTHERN CONSTELLATIONS.

Columba Noachi .	Noah's Dove . .	10	Apis, or Musca . .	The Bee or Fly .	
Robur Carolinum .	The Royal Oak .	12	Chamæleon . . .	The Cameleon .	1
Grus	The Crane . . .	13	Triangulum Australis	The South Triangle	
Phœnix	The Phœnix . . .	13	Piscis volans, or Passer	The Flying Fish .	
Indus	The Indian . . .	12	Dorado, or Xiphias .	The Sword Fish .	
Pavo	The Peacock . .	14	Toucan	The American Goose	
Apus, or Avis Indica	The Bird of Paradise	11	Hydrus	The Water Snake	1

597. TABLE III.
HEVELIUS'S CONSTELLATIONS MADE OUT OF THE UNFORMED STARS.

		Hevelius.	Flamstea
Lynx	The Lynx	19	44
Leo Minor	The Little Lion	—	53
Asterion and Chara . . .	The Greyhounds	23	25
Cerberus	Cerberus	4	—
Vulpecula and Anser . . .	The Fox and Goose . . .	27	35
Scutum Sobieski	Sobieski's Shield	7	—
Lacerta	The Lizard	10	16
Camelopardalus	The Camelopard	32	58
Monoceros	The Unicorn	19	32
Sextans	The Sextant	11	41

SECT. V.—OF CALCULATING THE PERIODICAL TIMES, PLACES, &C. OF THE CELESTIAL BODIES; CONSTRUCTING ASTRONOMICAL TABLES, AND DELINEATING THE PHASES OF THE MOON.

598. This section, if treated fully, would comprehend almost the whole of practical astronomy, a subject so extensive, that the whole sp which we can devote to the subject of astrono would not suffice to do it justice. We sh however, we hope, give an abstract of the lead points in this department of the science, wh may at once gratify the wishes of the amate

and stimulate the further enquiries of those who may be inclined to pursue the subject.

599. Indeed the elements of the chief bodies in our system have long been tabulated, and the mere practical astronomer may, without any knowledge of the causes of the planetary motions, compute from the tables where any planet in the system will be found at any given instant. The tables in the third volume of Vince's Astronomy are a treasure to the astronomer, though those of the moon have been superseded by the improved ones of Burkhardt.

600. We have already shown how an observer who knows his own latitude may find the position of the ecliptic with respect to the equator, and that point of the heavens in which the celestial equator and the ecliptic intersect. We now proceed to the solution of Kepler's problem, or to the method of finding the place of a planet in an elliptical orbit.

601. Let A P B, fig. 12, plate VI., be an ellipse, E the sun in the focus, round which the earth, P, or any other planet revolves. Let the planet's motion, and the time of its motion, be dated from the extremity of the major onis, A, called the aphelion or apside. Now we are supposed to have given the time of the planet's quitting it, to find the position of the point P in the ellipse, either by finding the value of the angle A E P, or by cutting off from the whole ellipse and area A E P, which is to the area of the whole ellipse as the time from A to P bears to the whole time of revolution. The line E P is called a radius rector.

602. Let a circle A M B be described on A B as its diameter, and suppose a point to describe this circle uniformly, and the whole of it in the same time as the planet describes the ellipse, let t denote the time elapsed during P's motion from A to P; then if A M $\frac{2 . t . \mathrm{A\,M\,B}}{\text{periodic time}}$ M will be the place of the point that moves uniformly, while P is that of the planets; the angle is called the mean anomaly, and A E P the true anomaly.

603. Hence, as the angle A C M can always be found when t is given, the solution of Kepler's problem is reduced to this, to find the true anomaly in terms of the mean.

604. The angle D C A, determined by producing the ordinate A^2 P to the ellipse is called the eccentric anomaly, which has been devised for the purpose of expediting the computation of the true anomaly. It holds a mean between the two other anomalies, and is a step in the computation from the one to the other.

605. We shall first deduce two equations, by which the eccentric anomaly is expressed, in terms of the true and mean anomalies respectively.

Let t = the time in describing A P, P = the eriodic time in the ellipse a = C A, $a\,e$ = EC, = ∠ P E A, u = ∠ D C A, (whence E T = C. sin. u, E T being perpendicular to D T) τ ρ = P E, $\pi = 3\cdot1415986$; then, by the law of the quable description of areas,

$$= \mathrm{P} \times \frac{\text{area P E A}}{\text{area of ellipse}} = \mathrm{P} \times \frac{\text{area D E A}}{\text{area } \odot}$$

(by conics) $= \frac{\mathrm{P}}{\pi a^2} \times (\mathrm{DEC} + \mathrm{DCA}) = \frac{\mathrm{P}}{\pi a^2} \times \left(\frac{\mathrm{ET.DC}}{2} + \frac{\mathrm{AD.DC}}{2}\right) = \frac{\mathrm{P}\,a}{2\,\pi a^2} \times (\mathrm{E\,C} \sin u + \mathrm{D\,C}.u) = \frac{\mathrm{P}}{2\,\pi} \times (e.\sin.\,u + u)$: hence if we put $\frac{\mathrm{P}}{2\,\pi} = \frac{1}{n}$ we have

$n\,t = e.\sin.\,u \times u$, an equation connecting the mean anomaly $n\,t$ with the eccentric u.

606. To find the equation between the true and eccentric anomaly we must investigate and equate two values of ρ. Now the value of ρ in terms of the true anomaly is by conics =

$$\frac{a\,.\,\overline{1 - e^2}}{1 - e.\cos.\,u.}$$

and in terms of u the eccentric anomaly $\rho = a\,\overline{1 + e.\cos.\,u}$.

In $\rho^2 = \mathrm{EN}^2 \times \mathrm{PN}^2 = \mathrm{EN}^2 + \mathrm{DN}^2\,\overline{1 - e^2} = \overline{a\,e + a.\cos.\,u}^2 + a^2 \sin.^2 u\,\overline{1 - e^2} = a^2 + 2\,e\cos.\,u + \cos.\,2\;u + a^2\,1 - e^2\,\mathrm{'m}^2\,u = a^2 + {}^2e\cos.\,u - e^2\cos^2 u$ when $\rho = a\,1 + e.\cos\cdot u$.

By equating these two values of P we have, $1 - e^2 = \cos u\,1 + e\,.\cos u$; whence $\cos.\,v = \frac{e + \cos u}{1 + e\cos.\,u}$, an expression which may readily be transformed into 1 $\tan\frac{u}{2}\sqrt{\frac{1 - e}{1 - e}}.\tan\frac{u}{2}$

The difference between the mean and true anomalies is called the Equation of the Centre; which has its greatest value when P moves with its mean angular velocity, as may be thus made evident. If we conceive a body to move uniformly in a circle round E, as a centre, with the mean angular velocity of P round E, revolving round the circle in the same time that P revolves round the ellipse. If they both depart from P together, then P at the first moving with its least angular velocity, will describe round E a less angle than the fictitious body does, which body will therefore advance before P, till the angular velocity of P becomes equal to that of the body, at which time their angular distance will be the greatest, and P will immediately afterwards begin to gain upon the body.

608. To determine the ellipse in which the equation of the centre is the greatest, conceive a circle to be described round E as a centre, setting the ellipse on some point P, and the line E A somewhere between E and A. Then, if the angular velocities be inversely as the squares of the distances from E, the angular velocity in the ellipse from A to P, will in every intermediate point be less than the angular velocity of the body in the circle, in all the points between E A and P. But if the areas described by the body in the ellipse, and the body in the circles, be respectively equal, the angular velocities are inversely as the squares of the distances.

609. If then the incremental areas be equal, the whole areas are equal, since by condition, the lines of revolution are equal. Let therefore X be put for the value of E P, 2 a = the major axis, and $a\,e$ = the eccentricity of the ellipse, then by equating the expression for the elliptic area,

and that of the circle we obtain

$$x = a \times \overline{1-e^2}^{\frac{1}{2}} = \times \left(\overline{1-\frac{e^2}{4}-\frac{3}{32}e^4}\right)$$

nearly.

609* From the above value of the radius vector when the equation of the centre is the greatest, the corresponding, true, and eccentric anomalies may be computed by the general equations for those purposes given above.

Viz. $\rho = \frac{a.\overline{1-e^2}}{1-e\cos.u}$ 1 $\rho = a.\overline{1+e.\cos u}$;

and hence, too, the mean anomaly nt is determined from $nt = u + e.$ sine u, and finally there results the greatest equation of the centre $= \overline{+}\ \overline{v-nt}.$

We proceed now to the principles of the method by which the place and motion of the aphelia are determined.

610. It is evident that the sun being in perigee at the least distance and in apogee at his greatest, if we could measure his diameter with sufficient nicety, so as to determine when it is greatest or least, the corresponding places of the sun would be those of the perigee and the apogee respectively; or if, by observing the sun's place from day to day, we could ascertain the times when his angular motion was the greatest or least, his places at the corresponding time would be those of the required points. And if, at a period considerably distant, like observations were repeated, a comparison of the results would shew whether the place of the apogee was stationary or not.

611. Now by the observations of various astronomers, it has been found that the apogee of the earth's orbit is progressive, as may be seen from the following statement:

Astronomer.	Year.	Longitude of Apogee.			
Cochin King .	1279	3s.	0°	8′	0″
Waltherus . .	1496	3	3	57	57
La Hine . .	1684	3	7	28	0
Flamsteed . .	1690	3	7	35	0

The mean result of these observations gives about 1′ 3·4″ for the annual progressive motion of the apogee of the earth's orbit.

612. The following, however, is a more accurate method of determining the progression of the apogee. Let S E r (fig. 13. Plate VI.) be a right line, and draw T E t, making with A B, the major axis, an angle T E A = S E A; now the time through r B t S is less than the time through the remaining are S A T r; for the equal and similar areas S E t, T E r, are described in equal times, but the area r E t, is less than S E T, and it will therefore be described in less time; whence r E t + S E t, which is equal to S E r t S, is described in less time than S E T + T E r, which compose the area S E r T S. This property belongs to every line drawn through E, except A B, the major axis, or the line which joins the aphelion and perihelion of the orbits. Hence, if on comparing two observations of the sun in opposite longitudes, as at S and r, it appears that the time elapsed is not half a year, we may be sure that the sun has not been observed in apogee or perigee. In practice, however, the interval will not differ much from half a year, and the true position of the apogee may be determined in the following manner:

613. The time from r to S = the time fro r to B + the time from B to A — the time fro S to A; or, time from B to A — time from r S = time from S to A — time from r to Now the first of these differences is know being the difference between half an anom listic year (the time from the sun's leaving t apogee till his return to it) and the observed terval; and the second term of the second d ference may be expressed by means of the fi For let the first term = t, then the time from

$$B = t.\frac{\text{area } r\text{ E B}}{\text{area S E A}} = t\,\frac{r\text{B} \times \text{E B}}{\text{S A} \times \text{E A}}$$ (r and

being supposed near the apsides)

$$= t.\frac{r\text{ B}}{\text{E B}} \times \frac{\text{E A}}{\text{S A}} \times \frac{\text{E B}^2}{\text{E A}^2} = t \times \frac{\text{E B}^2}{\text{E A}^2}$$

$$= t \times \frac{\text{angular velocity at A}}{\text{angular velocity at B}}.\ \text{For } \frac{r\text{ B}}{\text{E B}} =$$

each representing the incremental angle r E

614. Now the angular velocities at A and or the increments of the sun's longitude, be known from observation, and the time from B being expressed in terms of those veloci and of t, the quantity t may be readily de mined; whence the exact time when the sun at A; and his longitude, computed for that tim is the longitude of the apogee.

EXAMPLE.

1743.Dec.30. 0h. 3m. 7s. ☉'s long.	9s	8°	29′	12·5″
1744.Jun.30. 0h. 3m. 0s.	3	8	51	1·5
Difference .	6	0	21	4·9

Therefore at the second observation, Jun 30th, the sun was past S. In order to fin when he was at S, that is, when the difference the longitude was six signs (or supposing the per gee to have progressed through 31″) when th difference of the longitudes was 6 s 0° 0′ 31″, w must find the time of describing 21′ 49″ — 31 or 21′ 18″. This is easily effected by this pr portion, as the sun's daily motion on June 30 (57′ 12″) : 24 hours : : 21′ 18″; 8h. 56m. 13s which taken from June 30th, 0h. 3m., leav June 29th 15h. 6m. 47s. for the time when th difference of the sun's longitudes under the give circumstances was 180° 0′ 31″.

615. The interval between this last time an Dec. 30th, 0h. 3m. 7s. the time of the past ob servation, is 182d. 15h. 3m. 40s., nearly th time from r to S: but this time is less than ha an anomalistic year, which is 182d. 15h. 7m 1 s., as has been found by repeated observation and as we have seen above: t — time from r t B = 3m. 21s.; and time from r to B = $\frac{57'\ 12''}{61'\ 12''}$; whence, by substitution and reductio we have t = 47m. 54s. This added to Jun 29th, 15 h. 6m. 47s., when the sun was at S gives June 29th 15h. 6m. 47s. for the tim when he was in apogee.

616. The sun's longitude at that time must b less than his longitude on June 30th, 0h. 3m by the difference due on the difference of th times, which is 8h. 8m. 19s. This quantity i easily found by proportion to be 19′. 21″, an

hence the longitude of the apogee is 98°. 31′ 40·5′, or 8° 31′ 40·5″ past the summer solstice.

617. From the longitude at any given time and the annual progression, the position of the apogee and of the axis of the solar ellipse may be found by proportion for any other time. If it were required, for example, to find when the axis of the solar ellipse was perpendicular to the line of the equinoxes, or when the longitude of the perigee was 270°. Now its longitude in 1750 was 9ˢ 8° 37′ 28″, hence, taking the annual progression at 62″, $\frac{8° \; 37' \; 28''}{\cdot 62''} =$ about 500 years, as the major axis was perpendicular to the line of the equinoxes in 1250. It is remarkable, that the period in which the major axis coincided with the time of the equinoxes, is at the time which astronomers consider to be that of the beginning of the earth.

618. Our next object is to explain those observations made at the earth, and reduced to what they would have been if the observer had been at the sun; as the methods of extricating from the geocentric observations of a planet's place, the elements of the orbit which it describes round the sun.

619. The observations made on the earth are, generally speaking, for right ascensions by the transit instruments, and polar distances by the quadrant or axle The latitudes and longitudes are not observed, but computed from the right ascensions and declinations. Let A, fig. 15. plate VI., represent the first point of Aries, A C a portion of the ecliptic, A B a portion of the equator, S a star, S B its declination, and S C its latitude; then A B will be its right ascension and A C its longitude round B A C, the obliquity of the ecliptic. Now the method of finding B A C has already been shown; B S is determined by the circle or quadrant, and A B by the time shown by the siderial clock when the sun is on the meridian. Hence A C, C S, and the angle B A C, are given to find A B and B S. Now cos. A S = cos A C . cos. C S; cos. S A C = cos. C S . in A C, S A B = S A C = B A C; tan A B = cos. S A B . tan. A S and sin. B S = sin. A S . in B A S. Hence the geocentric latitudes and longitudes may be always determined.

620. If $a =$ the right ascension, $d =$ the declination, $l =$ the latitude, $\lambda =$ the longitude, and $o =$ the obliquity of the ecliptic, then l and λ may be determined from the following equations:

$\tan. \lambda = \sin. o \; . \; \tan. d \; . \; \sec. a + \tan. a \; . \; \cos. o$

$\sin. l = \sin d \; . \; \cos. a - \sin. a \; . \; \cos. d \; . \; \sin. e.$

621. By either of these methods the geocentric latitude and longitude may be determined. Among the resulting values of the latitude, some will be either nothing or very small. If the geocentric latitude is nothing, the heliocentric latitude is also nothing, or the planet is in the plane of the earth's orbit, or in that point of its own orbit which is called its node; the node being the intersection of the orbit of a planet with the plane of the ecliptic. It is not likely, however, that the planet will be observed exactly in the node; but if by one observation its latitude is found to be a south, and by another at an interval of time t, to be a' north the $\frac{a\,t}{a + a'}$ is the interval, which added to the time when the planet had the latitude, a will give the instant at which it was in its node.

622. As we can thus find the time of a planet's entering its node, we can determine the time of its passage from the descending to the ascending node, and also the time between two successive returns to the same node; and if the place of the nodes and the dimensions and line of the oroit remain unchanged, the latter interval must be the periodic time of the planet; and if the former interval were half the latter, it would prove either that the orbit of the planet was circular, or, if elliptical, that its major axis coincided with the positions of the nodes.

623. Now let N P, fig. 14, plate VI. be part of the orbit of a superior planet, N π C a portion of the ecliptic, E the earth, S the sun; and let P π be an arc of a great circle from P perpendicular to the ecliptic. A spectator at E, sees P π under the angle P E π, which is therefore the geocentric latitude; and a spectator, as S, would see P π under the angle P S π, which is therefore the heliocentric latitude. If γ be the first point of Aries, then as the diameter of the earth's orbit subtends no sensible angle at the fixed stars, a line drawn from E to γ may be considered as parallel to a line drawn from S to γ. Hence

the geocentric longitude of P (L) is $\angle \; \pi \, E \, \gamma$

the heliocentric longitude of P (P) is $\angle \; \pi \, S \, \gamma$

the longitude of the sun, (⊙) is $\angle \; S \, E \, \gamma$,

and consequently,

$$L = \odot + \angle \; S \, E \, \pi = \odot + E,$$

E representing the angle S E π, called the angle of elongation.

624. The angle E S π, is called the angle of commutation, (C) the angle S π E, or rather the angle S P E, under which the earth's radius appears from the planet, is called the annual parallax.

625. To proceed. $\gamma \, S \, \pi, (P) = \angle \; S \, E \, \gamma + 180° - E \, S \, \pi = \odot + 180° - C$, whence P may be determined, if C be previously known. But S E is known from the solar theory, and S E π, or $E = L - \odot$ is known, since L can be computed as we have shown above from the observed right ascension and declination, and ⊙ is known from the solar theory; therefore to find the angle E S π, and all the other parts of the triangle, it is only necessary to know S π, which is called the curtate distance.

626. Now $S \, \pi = S \, P \cos. \angle \; P \, S \, \pi = \gamma \; . \; \cos. H$; whence to find S π we must know the values of γ and H. Let $I = P \, N \, \pi$, represent the inclination of the planet's orbit, to the plane of the ecliptic. Then by spherics, $\tan. H = \cos. N \, \pi \; . \; \tan. I$, whence to find H we must previously know I and N π, the distance of the reduced place of the planet from the node of its orbit, which distance is evidently equal to the longitude of the planet, minus the longitude of the node.

627. If the eccentricity of the orbit be small, S P, or r, may be determined by Kepler's law, but it is the mean distance which is determined

by that law; and therefore except P move in a circle, S P so determined will not be quite correct. And in fact there is no direct and general method of determining S P. Astronomers therefore select those positions of a planet in which its heliocentric longitude is exactly known. Now when the inferior planets are in conjunction, their longitudes are exactly known, as when they are in superior conjunction their longitudes are equal to ⊙, and in inferior equal to 180° + ⊙.

628. In such positions then the heliocentric longitude is obtained without any knowledge of S P, and without trigonometrical computation. The geocentric longitude may be computed from the right ascension and declination by the formulæ already given.

629. If we conceive N π C to represent the earth's orbit, and *e* E that of an inferior planet, then E π S is called the planet's angle of elongation, and π E S its annual parallax, when π E is a tangent to E *e*.

To find the periodic time, mean motion, and distance of a planet.

630. From the observed right ascensions and declinations compute its geocentric latitude; and find when it is equal to nothing. The planet is then in its node. Find in the same way at some subsequent period when it returns to the same node, and thence the periodic time may be determined.

631. This method of finding the periodic time serves also to show whether the orbit is eccentric, and the degree of the eccentricity; as will appear from the following detail given by Delambre, for finding the periodic time of Mars:—July 23d, 1807. ♂ in his descending node (☋) and his southern latitude increased till Dec. 16th. If the latter time be assumed as that when his latitude was greatest, and the interval (145 days) of his passage from the node to that position, be taken as one-fourth of his periodic time, the period will then be 560 days.

632. But on May 21st, 1808, ♂ in his ascending node (☊) and the interval in his passage from ☋ to ☊ was 302 days. If that interval were half the period, the period would be 604 days.

633. Again on March 7th, 1809, the north latitude of Mars was 2° 49′; and in June 8th, it was (0), when Mars had returned to the node in which he was on July 23d, 1807, in 687 days, which must be very nearly the period of his revolution.

634 Now from this detail, and what we have done before, we may infer that the orbit of Mars is not circular, and that the major axis is neither perpendicular to, nor coincident with, the line of the node.

635. But we may draw farther inferences. The time from ☋ to ☊ being less than the other half of the period by 83 days; if (plate VI. fig. 13) N *n* represent the line of the nodes, we have $\frac{\text{NA}n - \text{NB}n}{\text{NA}n} = \frac{83}{385}$ since the areas are proportional to the times. Now when N *n* is perpendicular to A B, the difference between N A *n* and N B *n* is a maximum. In such a position $\frac{\text{AEN} - \text{NEB}}{\text{AEN}}$ would be nearly $\frac{41}{193}$ or the time from B to N would be nearly 152 days and from N to A 193 days.

636. But the period being nearly 687 days in which the planet describes 360° the time of describing 90° would be nearly 171 days, supposing the planet to depart from B, and to move with its mean motion; but as we have seen, the planet was in N nineteen days previously, in which time its mean motion is equal to nearly [illegible] When the real planet therefore was at N, the fictitious body moving with the planet's mean motion would be nearly 10° behind. Now the difference is what has been denominated the equation of the centre, which at N is nearly [illegible] its greatest value. Hence the greatest equation of the centre in Mars cannot be less than [illegible] The same process for finding the periodic time and like inferences respecting the eccentricity are applicable to Jupiter and Saturn. But [illegible] Georgian planet has not completed more than [illegible] a revolution since it was first discovered, and yet we have the elements of its orbit to a very considerable degree of exactness. The following method of determination by La Lande (one indeed of trial and conjecture, but which after a few times is sure of succeeding) will be easily understood.

637. Resuming the notation already employed; the angle of elongation (E) = L—⊙, L being the geocentric longitude, and E π S, the angle of parallax (π) is the difference of the heliocentric and geocentric longitudes, and therefore equal to P—L. Now E = L — ⊙ is known, and π is known from the expression sin. π = sin. E, $\frac{\text{S E}}{\text{S}\,\pi}$ if we can find S π. If we assume a value (*r*) for S π (S π and S P being nearly equal) we shall from the above equation have a corresponding value of π, and thence of P: let this value be represented by P′. Make another computation with π and a second and third geocentric longitude, and let the resulting heliocentric longitudes be P″ and P‴. Then we have P″ — P′, P‴ — P″, and P‴ — P′, and from the three times of observation, t; t'' and t''' we have $t'' - t'$, $t''' - t''$ and $t''' - t'$.

Hence $P''' - P' : t''' - t' :: 360°$: planet's period,
Or $P'' - P' : t'' - t' :: 360°$: planet's period,
As $P''' - P'' : t''' - t'' :: 360°$: planet's period.

638. By any of these three proportions may the period be computed; but *r* is assumed as the mean distance, and if 1 = the earth's mean distance, and *p* its periodic time; the periodic time of the planet will be represented by $p\,r^{\frac{3}{2}}$; and if this result agree with the former one, it will be a proof that *r* has been rightly assumed; and the disagreement by its nature and magnitude will point out the manner and extent of correcting the first assumption for γ.

639. La Lande computed from three geocentric observations of the planet made on April 25th, July 31st, and Dec. 12th, 1781, and he found from the above formulæ, the periodic time. The two values disagreeing he amended his first assumption, guided partly by conjecture and partly by his first trial, till a value of *r* was obtained which agreed with all the observations.

640. The distance of an inferior planet may also be determined from observations on its dis-

from the sun when stationary, or from what een called its greatest elongation. Let E E′ be two of the greatest elongations, one the planet is in aphelion and the other in lion, e the eccentricity of the orbit, R and distances of the earth from the sun, the planet's mean distance; then $e =$ $\frac{= E - R' \sin E'}{2r}$ an equation which deter- the relation between the eccentricity and listance.

We proceed now to the method of deter- the place of the node of a planet's orbit, inclination of its orbit to the plane of the In fig. 16, plate VI. let N n, represent les. Now from the observed right ascen- d declination we can in an hour even com- e planet's geocentric latitude, and when equal to 0, the planet is in its node. E′ be the two positions of the planet s viewed from the earth, it is respectively d N. Then S E n = geocentric longitude et at $n - \odot$ and S E′ N $= \odot' -$ geocen- gitude of planet at N. Now we already ow to compute S N or S n, and hence in ngles S E n, S E N, we can compute the n S E, S n E, and N S E′, S N E′; and heliocentric lon. of $n = 180 + \odot - \angle\, n$SE liocentric lon. of $\mathrm{N} = \odot' - 180 +$ E′, $\odot$ and $\odot'$ representing the sun's lon- at the two times of observation; and the E S E′ is proportional to the earth's mo- ring the planet's passage from n to N.

It is evident that the determination of the f the node is the more difficult, the less is lination of the planet's orbit; and it is on this account to determine the nodes rbits of Jupiter and the Georgian planets.

The longitude of the node being found, ination of the orbit may be thus deter- Compute the day on which the sun's de will be the same, or nearly the same longitude of the node, the earth will then rly in the line of the nodes N n, at some , fig. 16, plate VI. On that day observe net's right ascension and declination, and deduce the geocentric latitude (G.) Then ϵt tan. $\mathrm{G} = \mathrm{S}t \frac{\sin. t\mathrm{S}e}{\sin. \mathrm{S}ep}$ tan.$\mathrm{G} = \frac{\sin. \mathrm{N}t}{\sin. \mathrm{E}}$; but sin. N t = cot. t N p. t p; or tan. I sin. tp (I denoting the inclination); whence $= \frac{\tan. \mathrm{G}}{\sin. \mathrm{E}}$. A like diagram and a similar will apply to a superior planet. The on may also be determined from observing et at conjunction when its latitude is con- e. If $r =$ the planet's distance from the ced to the ecliptic, I the inclination, and bove, the geocentric latitude. Then it easily shown, that:

$$= \left(1 - r + \frac{r}{2} \tan.^2 \mathrm{I}\right) \frac{\tan. \mathrm{G}}{\sin. (\odot - \text{☊})}$$

an equation from which I may be obtained, either by approximation, or the solution of a quadratic equation.

644. The next step in the investigation is the determination of the form of the planetary orbits. For the sake of simplifying the problem, in the first instance, we shall suppose that the planet's orbit lies in the plane of the ecliptic. Since the mean motion is known from the periodic time, and by observing in opposition or conjunction the planet's true longitude we can at any instant determine its mean longitude. Then if the elapsed time were the interval between two conjunctions, and the orbit were circular, the computed mean longitude would agree with the last observed longitude; and a difference would be an indication of the orbit's eccentricity; which difference must depend both on the eccentricity and the place of the aphelion.

645. To apply these considerations to the subject in hand, let N (fig. 14, plate VI.) be the node of the orbit. Then as its longitude may be considered (from what has preceded) as known, and the longitude of a planet when in conjunction with the sun is known, being equal to 180° $+ \odot$, if we deduct the longitude of the planet from the longitude of the node, there remains N π. Now as the elliptical motion takes place in the orbit N P it is requisite to know N P, and other like distances of the planet from its node. But N π being known, and the angle P N π; the distance N P may be computed. For let P N = cos. N. cos. N π.

646. If we set off on the orbit of the planet an arc (A) = N r, the longitude of the node, we shall have A + N P which is called the longitude of the planet on its orbit; and we can have as many such longitudes as there are observations in conjunction or opposition.

647. Three observations are sufficient to determine the two elements of the eccentricity, and the place of the aphelion; for if we have three longitudes $(V', V', V'',)$ we have two independent differences of longitude, and as soon as the planet's period is known, we can compute two portions of its mean motion corresponding to the two corresponding noted intervals of time; and the two real differences of longitude compared according to the elliptic theory, with the corresponding portions of mean motion, will give us two equations for determining the eccentricity and place of the aphelion.

648. Let e be the eccentricity (supposed to be very small) ϕ the longitude of the perihelion, the place of which suppose to be at some point between N and P, and let M, M′, M″, be the mean anomalies reckoned from the perihelion. Then we have

$$V - \phi = M + 2e \,.\, \sin. \overline{V - \phi}$$
$$V' - \phi = M' + 2e \,.\, \sin. \overline{V' - \phi}$$
$$V'' - \phi = M'' + 2e \,.\, \sin. \overline{V'' - \phi}$$

Hence $\overline{V' - V} - \overline{M' - M}\,(= a) = 2e. \left\{ \sin. \overline{V' - \phi} - \sin. \overline{V - \phi} \right\}$

And $\overline{V'' - V'} - \overline{M'' - M'}\,(= b) = 2e. \left\{ \sin. \overline{V'' - \phi} - \sin. \overline{V' - \phi} \right\}$

Now as V, V', V'' are known, and $\overline{M'-M}$ $\overline{M''-M'}$ are known from the period of the planet and the elapsed time; for if t be the interval between the observations of V and V'; we have Planet's period : $360° :: t : M'-M=\frac{t.\ 360°}{\text{period.}}$

Hence since a and b are known, we have two equations for determining e and ϕ. If the first of these equations be divided by the second $\frac{a}{b}=\frac{\sin.\overline{V-\phi}-\sin.\overline{V-\phi}}{\sin.\overline{V''-\phi}-\sin.\overline{V'-\phi}}$ from whenc duction we obtain tan. $\phi=$ $\frac{a\cdot\sin.\overline{V''}-\sin.\overline{V'}-b\cdot\sin.\overline{V'-s}}{a\cdot\cos.\overline{V''}-\cos.\overline{V'}-b\cdot\cos.\overline{V'-c}}$ Hence, ϕ being determined, we have

$$e=\frac{a\cdot\sin.1''}{2[\sin.\overline{V'-\phi}-\sin.\overline{V-\phi}]}=\frac{a\cdot\sin.1''}{4\cdot\sin.\frac{V'-V}{2},\cos.\left(\frac{V'+V}{2}-\phi\right)}.$$

649. Then e and ϕ, and the major axis being determined, we can compute the radius sector γ from this expression, $r=\frac{a\cdot\overline{1-e^2}}{1+e\cdot\cos.\overline{V-\phi}}$: and since the place of the node, and the inclination of the orbit are determined, we can compute the curtale distance S π, on the supposition that S P, from which it is deduced, is the radius vector of an elliptical orbit. If, therefore, in any of the processes for determining the elements of the planet's orbit, the curtale distance S π has been supposed derived from S P, considered as a mean distance, we may now, with a more correct value of S π, repeat the operations and correct the results.

650. We shall now direct our attention to the method of finding the synodical revolutions of the planets, and of computing their returns to the same point of their orbits.

651. The time between conjunction and conjunction, or between opposition and opposition, is called a synodical period. Let us suppose that at a given instant the sun, Mercury, and the earth, are in the same right line; then, after any elapsed time (a day for example), Mercury will have described an angle m, and the earth an angle M, round the sun. therefore at the end of a day the separation of Mercury from the earth, as seen from the sun, will be $m-M$, and at the end of s. days $s.\overline{m-M}$; and when $s.\overline{m-M}=360°$, the sun, Mercury, and the earth, will be again in the same right line, and in that case $s=\frac{360°}{m-M}$, where s denotes a synodical period and m, M the mean motions of Mercury and the earth for any equal intervals of time.

653. Let P and p denote the siderial periods of the earth and the planet; then, since 1 d. : M° : : P : 360° and 1 d. : m° : : p : 360°, we have $M=\frac{360}{P}$ and $m=\frac{360°}{p}$; which substituted for m and M in the preceding equation, gives $s=\frac{Pp}{P-p}$. Or if 1 represents the earth's mean distance, and r that of the planet; we have P : p :: 1 : $r^{\frac{3}{2}}$; or $\frac{P}{p}=r^{-\frac{3}{2}}$ whence $s=\frac{P}{r^{-\frac{3}{2}}\backsim 1}$. We have here three expressions, from any of which s may be computed.

654. For instance, in the case of Mercury, $p=87$ d. 969, and P being 365·269, we have s, the synodical period of Mercury $=\frac{365\cdot256\times87\cdot969}{277\cdot287}=$ 115d. 21h. nearly.

In the case of the moon, $m=13°\cdot17$ M, the earth's daily mean motion $=59$ whence $s=\frac{360°}{m-M}=29$ d. 12h. near

655. Since $s=\frac{Pp}{P-p}$, $p=\frac{sP}{s+P}$; fore from the known periodic time of th and the observed synodic period of a pla can determine p, the periodic time of the But to insure accuracy in the determinat return of the planet to a conjunction n the same part of its orbit, at which a p one was observed, ought to be noted, interim divided by the number of sy revolutions will give the mean synodic For under these circumstances there nearly a mutual compensation of the ineq arising from the elliptic form of the orbit.

656. Another reason for attending caution, is that on such conjunction dep transits of Venus and Mercury, over th disk. For it is evident that Venus to be the sun's disk, must not only be in conj but near the node of her orbit: at the ne junction, after one synodical revolutio cannot be near her node, and can only b near when she returns to the same part orbit, as at the first time of observation.

657. The preceding formulæ for the periods afford us the means of knowin particular conjunctions.—

The time s of a synodic period is $=$ therefore at $\frac{n\times Pp}{P-p}$, the planet will sti conjunction, n representing any whole It will therefore be for the first time in c tion, and the earth and planet will als the same part of their orbits, when $\frac{n}{P}$ P, or when $n=\frac{P-p}{p}$. Hence the conjunction can only take place when $\frac{P}{}$ some of its multiples is a whole num when, $\frac{m\ .\ P-p}{p}=n$, or when $\frac{m}{n}=$ whence we have simply to find two int and n, such that $\frac{m}{n}=\frac{p}{P-p}$.

658. Now the tropical revolution of is 87·968 days, hence $\frac{m}{n}=\frac{87\cdot968}{365\cdot256-}$

$= \frac{87\cdot968}{277\cdot288}$, consequently in 87,988 periods of the earth, there will be 277288 synodical revolutions of Mercury, which will then be observed again in conjunction, and in the same part of its orbit. This result however, from the length of the period, is of no practical use; we must, therefore by means of continued fractions (see ALGEBRA) endeavour to find fractions in smaller terms, having nearly the same value as $\frac{87968}{277288}$,

659. Making the computation we find the following series of fractions continually approximating to this value.

$\frac{1}{1}, \frac{6}{19}, \frac{7}{22}, \frac{13}{41}, \frac{33}{104}, \frac{46}{145}$, &c. in which the denominators denote the number of synodical revolutions, corresponding to the number of years expressed by the numerator. Take as an example the fourth fraction, in thirteen years, are 474·8328 days, and forty-one synodical periods, 475·0875 days, differing by only about six hours. If the sixth fraction be taken the difference will be little more than two hours.

660. In a similar way we may compute a series of fractions which will indicate the periods when transits of Venus may be expected. Thus, as Venus's period $(p) = 224$ d. 7008240, and the earth's $(P) = 365$d. 256385, the synodical period of Venus (s) $\frac{Pp}{P-p} = 583\cdot92$ d. nearly; and consequently in one synodical period the earth describes 575°·51 nearly; as in n synodical periods, $n.\ 575^\circ\cdot51$; and when this first becomes a multiple of 360°, the earth and Venus will be first in conjunction, in the line from which they originally departed. If, therefore, Venus were in or near the node in this original position that a transit took place, a transit will take place when (as before) $\frac{m}{n} = \frac{57551}{36000}$ Whence, by continued fractions, we obtain $\frac{1}{1}, \frac{2}{1}, \frac{3}{2}, \frac{8}{5}, \frac{222}{142}, \frac{235}{143}$, &c. a series of approximating value to $\frac{57551}{36000}$, from which we are able to tell after what number of synodic periods Venus and the earth will be nearly in the same parts of their orbits.

661. Thus, taking the fifth fraction, we infer that after 142 synodic periods, 227 circumferences nearly, will be described; or 142 synodic periods are nearly equal to 227 years; and on trial we find $575^\circ\cdot51 \times 142 = 360^\circ \times 227 + 2^\circ\ 42'$, or 2°·42 in excess. If we take the sixth fraction we shall find the result only 0°·03 in defect. Hence, 235 years after a transit of Venus we may confidently expect another, and also after 235 + 8, or 243 years; neglecting as we have done, and may safely do, the small alteration in the place of the node, that takes place in the interval of the transit.

662. A transit, however, may happen when the planet is in, or nearly in, the opposite node of her orbit. To find the time when it is probable that transits in the opposite node may happen, we have merely to find approximative values of $\frac{57551}{18000}$, which will be $\frac{3}{1}, \frac{16}{5}, \frac{227}{71}, \frac{470}{147}$, &c. Taking the third of these fractions, we have $71 \times 575^\circ\cdot51 = 180^\circ \times 227 + 1^\circ\cdot21$; the fourth gives $147 \times 575^\circ\cdot51 = 180^\circ \times 470^\circ - 0^\circ\cdot03$. Whence, supposing the earth, Venus, and the sun, to be exactly in a line, Venus being in one of her nodes, then, in 71 synodic periods, Venus will be 1°21 distant from the other node, and in 147 synodic periods, only about three hundreth parts of a degree distant from that node.

663. Did our limits permit, we should now enter upon the most difficult branch of the science, the Lunar Theory, but we must content ourselves with referring those who would acquaint themselves with this highly interesting subject, to the works of La Lande, La Place, and other foreigners, and to the astronomy of the late Professor Vince; more especially, however, to the elegant and masterly work of Professor Woodhouse.

664. *Table of the Transits of Venus over the Sun's Disk, that will occur to the Year* 3000.

Years.	True Time of Middle of Transit.					Semiduration for centre of Venus.			Shortest Dist. observed at the Earth's centre.	
			H.	M.	S.	H.	M.	S.		
1874	Dec.	8	15	43	27	2	4	41	13′	51″ N
1882	Dec.	16	4	49	41	3	1	43	10	29 S
2004	June	7	20	26	58	2	44	50	11	19 S
2112	June	5	13	37	25	3	20	45	8	20 N
2117	Dec.	10	14	34	0	2	22	50	13	0 N
2125	Dec.	8	3	44	30	2	48	20	11	28 S
2247	June	11	23	51	13	2	7	52	13	17 S
2255	June	8	16	59	9	3	36	2	6	23 N
2360	Dec.	12	13	29	31	2	42	27	11	49 N
2368	Dec.	10	2	38	5	2	29	12	12	37 S
2490	June	12	3	13	58	1	2	14	15	14 S
2498	June	9	20	20	58	3	46	24	4	29 N
2603	Dec.	15	12	25	54	2	56	47	10	56 N
2611	Dec.	13	1	40	30	2	15	20	13	20 S
2733	June	15	6	33	52	—			17	9 N
2741	June	12	23	38	38	3	53	23	2	35 N
2846	Dec.	16	11	26	34	3	7	24	9	56 N
2854	Dec.	14	0	44	20	1	54	10	14	12 S
2984	June	14	2	51	52	3	56	9	0	45 N

665. *Table of the Transits of Mercury over the Sun's Disk, that will occur before the Yea*

Years.	True Time of Middle of Transit.					Semiduration.			Shortest I observed Earth's	
			H.	M.	S.	H.	M.	S.		
1832	May	4	0	18	0	3	28	2	8′	16
1835	Nov.	7	8	12	21	2	33	53	5	37
1845	May	8	7	32	57	3	22	33	8	58
1848	Nov.	9	7	49	42	2	41	33	2	36
1861	Nov.	11	19	20	13	2	0	23	10	52
1868	Nov.	4	19	18	20	1	45	2	12	20
1878	May	6	6	55	13	3	53	3	4	39
1881	Nov.	7	12	59	32	2	39	9	3	57
1891	May	9	14	14	32	2	34	20	12	21
1894	Nov.	10	6	36	28	2	37	36	4	20

SECT. VI.—PRELIMINARY OBSERVATIONS RESPECTING ECLIPSES.

666. Before we lay down rules for calculating eclipses, it is necessary to make a few general observations respecting their nature and causes. All the planets and satellites being illuminated by the sun, cast their shadows towards that point of the heavens which is opposite to the sun. This shadow is nothing but a privation of light, in the space hid from the sun by the opaque body that intercepts his rays. When the sun's light is intercepted by the moon, so that he appears covered in whole, or in part, to any part of the earth, he is said to undergo an eclipse; though, properly speaking, it is only an eclipse of that part of the earth where the moon's shadow or penumbra falls. When the earth comes between the sun and moon, the moon falls into the earth's shadow; and having no light of her own, she suffers a real and total eclipse from the interception of the sun's rays. When the sun is eclipsed to us, the moon's inhabitants, on the side next the earth, see her shadow like a dark spot travelling over the earth, about twice as fast as its equatorial parts move, and the same way as they move. When the moon is in an eclipse, the sun appears eclipsed to her inhabitants; totally to all those parts on which the earth's shadow falls, and of as long continuance as they are in the shadow.

667. Although all opaque bodies, on which the sun shines, have their shadows, yet such are the distances of the planets, and the size of the sun, that the primary planets can never eclipse one another. A primary can eclipse only its secondary, or be eclipsed by it; and never but when in opposition or conjunction with the sun. The primary planets are very seldom in these positions, but the sun and moon are so every month; whence one may imagine that these two luminaries should be eclipsed every month. But there are few eclipses in respect of the number of new and full moons; the reason of which we shall now explain.

668. If the moon's orbit were coincident with the plane of the ecliptic, in which the earth always moves, and the sun appears to move, the moon's shadow would fall upon the earth at every change, and eclipse the sun to some parts of the earth. In like manner, the moo go through the middle of the earth's sha be eclipsed at every full; but with this di that she would be totally darkened for hour and an half; whereas the sun n above four minutes totally eclipsed to interposition of the moon. But one ha moon's orbit is elevated 5⅓ degrees a ecliptic, and the other half as much d below it; and when the sun and moon than 17° degrees from either of the no time of conjunction, the moon is then too high or too low in her orbit to cast of her shadow upon the earth: when t more than 12° from either of the nod time of full moon, the moon is gene high or too low in her orbit to go thr part of the earth's shadow; and in b cases there will be no eclipse.

669. But when the moon is less than either node at the time of conjunction, dow or penumbra falls more or less earth, as she is more or less within t And when she is less than 12° from ei at the time of opposition, she goes t greater or less portion of the earth's sh she is more or less within this limit. contains 360°; of which 17°, the limit eclipses on either side of the nodes, and limit of lunar eclipses, are but small and, as the sun commonly passes by but twice in a year, it is no wonder tha so many new and full moons without e

670. To illustrate this, let ABCD, fig. 9, be the ecliptic, RSTU a circl the same plane with the ecliptic, and the moon's orbit, all thrown into an view, which gives them an elliptical sh eye. One half of the moon's orbit, a is always below the ecliptic, and the o XYV, above it. The points V and X, moon's orbit intersects the circle RST lies even with the ecliptic, are the moo and a right line, XEV, drawn from other through the earth's centre, is the l nodes, which is carried almost paralle round the sun in a year. If the mo round the earth in the orbit RSTU, coincident with the plane of the ecli

shadow would fall upon the earth every time she is in conjunction with the sun, and at every opposition she would go through the earth's shadow; and thus the sun would be eclipsed at every change, and the moon at every full.

671. But although the moon's shadow N must fall upon the earth at *a* when the earth is at E, and the moon in conjunction with the sun at *i*, because she is then very near one of her nodes; and at her opposition, *n*, she must go through the earth's shadow I, because she is then near the other node, yet, in the time that she goes round the earth to her next change, according to the order of X Y V W, the earth advances from E to *e*, according to the order of E F G H; and the line of the nodes V E X, being carried nearly parallel to itself, brings the point *f* of the moon's orbit in conjunction with the sun at that next change. The moon being then at *f*, is too high above the ecliptic to cast her shadow on the earth; and, as the earth is still moving forward, the moon at her next opposition will be at *g*, too far below the ecliptic to go through any part of the earth's shadow; for by that time the point *g* will be at a considerable distance from the earth as seen from the sun.

672. When the earth comes to F, the moon, in conjunction with the sun Z, is not at *k* in a plane coincident with the ecliptic, but above it at Y, in the highest part of her obit; and then the point *b* of her shadow O goes far above the earth, as in fig. 2, plate IV, which gives an edge view of fig. 9. The moon, at her next opposition, is not at *n*, but at W, where the earth's shadow goes far above her, as in fig. 2, plate IV. In both these cases the line of the nodes is about 90° from the sun, and both luminaries are as far as possible from the limits of the eclipses. When the earth has gone half round the ecliptic, from E to G, the line of the nodes V G X is nearly, if not exactly, directed towards the sun at Z; and then the new moon *l*, casts her shadow P on the earth G; and the full moon *p* goes through the earth's shadow L; which brings on eclipses again, as when the earth was at E. When the earth comes to H, the new moon falls not at *m*, in a plane coincident with the ecliptic C D, but at W in her orbit below it; and then her shadow Q, see fig. 2, plate IV, goes far below the earth. At the next full she is not at *q*, fig. 9, plate V, but at Y in her orbit 5⅓ degrees above *q*, and at her greatest height above the ecliptic C D; being then as far as possible, at any opposition, from the earth's shadow M, as in fig. 2, plate IV.

673. Thus when the earth is at F and G, the moon is about her nodes at new and full, and in her greatest north and south declination (or latitude as it is generally called) from the ecliptic at her quarters; but when the earth is at F or H, the moon is in her greatest north and south declination from the ecliptic at new and full, and in the nodes about her quarters. The point X, where the moon's orbit crosses the ecliptic, is called the ascending node, because the moon ascends from it above the ecliptic; and the opposite point of intersection, V, is called the descending node, because the moon descends from it below the ecliptic.

674. When the moon is at Y, in the highest point of her orbit, she is in her greatest north latitude; and when she is at W, in the lowest point of her orbit, she is in her greatest south latitude. If the line of the nodes, like the earth's axis, was carried parallel to itself round the sun, there would be just half a year between the conjunctions of the sun and nodes. But the nodes shift backwards, or contrary to the earth's annual motion, 19⅓° every year; and therefore the same node comes round the sun nineteen days sooner every year than on the year before. Consequently, from the time that the ascending node X (when the earth is at E) passes by the sun as seen from the earth, it is only 173 days (not half a year) till the descending node, V, passes by him.

675. Therefore, in whatever time of the year we have eclipses of the luminaries about either node, we may be sure that in 173 days afterward we shall have eclipses about the other node. And when at any time of the year the line of the nodes is in the situation V G X, at the same time next year it will be in the situation *r* G *s*; the ascending node having gone backward, that is, contrary to the order of signs, from X to *s*, and the descending node from V to *r*; each 19⅓°.

676. At this rate the nodes shift through all the signs and degrees of the ecliptic in 18 years and 225 days; in which time there would always be a regular period of eclipses, if any complete number of lunations were finished without a fraction. But this never happens; for if both the sun and moon should start from a line of conjunction with either of the nodes in any point of the ecliptic, the sun would perform 18 annual revolutions and 222° over and above, and the moon 230 lunations and 85° of the 231st by the time the node came round to the same point of the ecliptic again; so that the sun would then be 138° from the node, and the moon 85° from the sun. But in 223 mean lunations, after the sun, moon, and nodes, have been once in a line of conjunction, they return so nearly to the same state again, as that the same node, which was in conjunction with the sun and moon at the beginning of the first of these lunations, will be within 28′ 12″ of a degree of a line of conjunction with the sun and moon again, when the last of these lunations is completed. And therefore in that time there will be a regular period of eclipses, or return of the same eclipse, for many ages.

677. In this period, which was first discovered by the Chaldeans, there are 18 Julian y. 11d. 7h. 43m. 20s., when the last day of February in leap years is four times included; but when it is five times included, the period consists of only 18y. 10d. 7h. 43m. 20s. Consequently, if to the mean time of any eclipse, either of the sun or moon, you add 18 Julian y. 11d. 7h. 43m. 20s., when the last day of February in leap-years comes in four times, or a day less when it comes in five times, you will have the mean time of the return of the same eclipse. But the falling back of the line of conjunctions, or oppositions of the sun and moon 28′ 12″, with respect to the line of the nodes in every period, will wear it out in process of time; and after that it will not return again in less than 12,492 years.

678. These eclipses of the sun, which happen about the ascending node, and begin to come in at the north pole of the earth, will go a little southerly at each return, till they go quite off the earth at the south pole; and those which happen about the descending node, and begin to come in at the south pole of the earth, will go a little north at each return, till at last they quite leave the earth at the north pole.

SECT. VII.—OF CALCULATING ECLIPSES.

679. The chief things to be considered in the calculation of eclipses are, the magnitudes of the shadow and penumbra of the opaque body, and the ecliptical limits, or the distance from the node, when an eclipse of the sun or moon will happen. These must be calculated both for lunar and solar eclipses. The operations may be performed as follows:—

I.—FOR LUNAR ECLIPSES.

680. In plate VIII. fig. 3, let AB be the sun, and CD the earth. Draw AC, BD, by the edges of the sun and earth, which will meet in a point V, because the sun is bigger than the earth. Through the centres of the sun and earth, S and T, draw STV. Also draw BCE, ADF, touching the contrary sides of the sun and earth, intersecting in P; also draw SC and CT. If the whole figure be turned round, about the axis SV, the lines AV, BV, APF, BPE, will generate the two cones CVD, EPF; the cone CVD, is the dark shadow of the earth, EPF continued, is the penumbral cone. And beyond V, the section of the cone EPF, will be all in the penumbra.

681. Hence, 1. Half the angle of the cone of the earth's shadow CVT, is equal to the sun's apparent semidiameter, less his horizontal parallax. For in the triangle SCV, the external angle $SCA = CVS + CST$. And CST is the sun's parallax. Therefore $CVT = SCA - CST$.

682. 2. Half of the angle of the earth's penumbral cone CPT, is equal to the sun's semidiameter and his horizontal parallax. For in the triangle CSP, the external angle $CPT = PCS + CST$.

683. 3. Hence half the angle of the earth's penumbral cone CPT, is equal to half the angle of the dark cone CVT + twice the sun's horizontal parallax CST.

684. 4. The apparent semidiameter of the earth's dark shadow IK, upon the moon's orbit, is equal to the sum of the horizontal parallaxes of the sun and moon, less the sun's apparent semidiameter. For the angle $VCI = CIT - CVI = CIT - SCA + CST$.

685. 5. The apparent semidiameter of the earth's penumbra, GI, upon the moon's orbit, is equal to the sum of the horizontal parallaxes of the sun and moon + the sun's apparent semidiameter. For in the triangle PCI, the external angle $ECI = CIT + CPT = CIT + PCS + CST$.

686. 6. Hence to find the length of the earth's shadow. In the triangle CTV there is given the angle V = sun's apparent semidiameter — his parallax, and CT the earth's radius, to find TV.

II.—FOR THE SHADOW AND PENUMBRA, IN SOLAR ECLIPSES.

687. In plate IV, fig. 10, let AB be the sun, KL the moon, CD the earth. Draw the tangents AK, BL, by the edges of the sun and moon, on the same side, to meet in V; and BKG, ALH to touch the contrary sides. Draw SK, IK; and through S and I, the centres of the sun and moon, draw the axis SIV. Then if the whole figure AKVLB be turned about the axis SV, the sides AV, BV, and PH, PG, will generate two cones KVL, GPH. The cone KVL is the dark shadow of the moon, and the cone GPH is the moon's penumbral cone. Hence,

688. 1. The angle of the cone of the moon's shadow KLV, the angle of the penumbral cone KPL, the angles GKV, and HLV, are each equal to the sun's apparent diameter AKB, very nearly; and half the angle of either cone P or V is equal to the sun's apparent semidiameter. For by reason of the great distance of the sun from T, in respect of TP, TV, TI; the apparent diameter of the sun, seen from any of the places V, T, I, P, K, will be the same, that is, the angles AVB or KVL, APB or KPL, AKB or GKV, ALB or VLH are all equal; differing only by the angle KSI, which in the moon is insensible.

689. 2. The height of the cone IP is equal to the cone VI. And KPL, KVL, are equal and similar. For the angles at P and V are equal; and KL is common.

690. 3. The apparent semidiameter of the moon's dark shadow QO, upon the earth at O, seen from the moon, is equal to the moon's apparent semidiameter—the sun's apparent semidiameter. And if the sun's apparent semidiameter be greater, the shadow does not reach the earth. For draw KO; then in the triangle KOV, $VKO = KOS - KVS = KOI - AVS = KOI - \frac{1}{2}$ the sun's apparent diameter.

691. 4. The apparent semidiameter of the moon's penumbra GO, upon the surface of the earth, as seen from the moon, is equal to the sum of the apparent semidiameters of the sun and moon. Draw GI and TGR. Then in the triangle GPI, the external angle $GIO = GPI + PGI = KPI + KGI = KPI + KOI = AKS + KOI$.

692. 5. Hence, to find the length IV of the moon's shadow. In the triangle KVI, there is given the angle KVI = half the sun's apparent diameter, and KI the earth's radius; whence VI will be had; and to find the arch QN of the earth, involved in the moon's dark shadow. In the triangle QVT, we have given TV the difference between the moon's distance from the earth, the height of the shadow; and the angle QVO = the sun's apparent diameter, and TQ the radius of the earth; to find the angle TQV, to which add QVT, and the sum is the angle QTO or arch QO; and doubled gives the whole arch QN.

693. 6. To find the arch of the earth GH involved in the penumbra; say, as the earth's radius GT : to S. of the sun's apparent semidia-

so is PT the sum of the moon's dis-
d cone's height: to S.T G P or R G K.
take the sun's apparent semidiameter,
remains G T O = G O, which doubled
. For in the triangle G P T, there is
angle P = the sun's apparent semidia-
PT the moon's distance and height of
and T G the earth's radius; to find the
K = G P T + P T G. Therefore P
T G = R G K − G P T = R G K—
pparent semidiameter.

o FIND THE ECLIPTICAL LIMITS.

eclipse of the moon can only hap-
the distance of the centres of the
of the earth's penumbra, is less than
their semidiameters. For if the dis-
ater, the moon and penumbra cannot
nother.

eclipse of the sun cannot happen un-
ance of the centres of the sun and
ss than the sum of their semidiame-
seen from a certain place. That it
ar in no place, the moon's parallax
ded to the sum of the semidiameters.
lunar eclipses, therefore, the moon's
st be less than the sum of the semi-
f the moon and of the earth's penumbral
en at the moon's orbit. And in solar
e moon's latitude must be less than
the sun's and moon's semidiameters
e moon's horizontal parallax; that the
y be visible some way: or without the
be visible in a certain place.

erefore in the right angled spherical
late IV, fig. 4, ☊ S M, having the
and the distance S M, the distance of
m the node, ☊ S will be known, or
limits. The mode of finding which,
n from the following

EXAMPLE.

		′	″
arent semidiameter of the sun		16	4
f the sun			12
arent semidiam. of the moon		15	38
f the moon		59	5
n of the moon's orbit	5	8	30
Hence will be obtained,			
diameter of the earth's pe-mbra	1	13	21
diameter of the moon and th's shadows		56	51
iameter of the sun and moon		31	42
with the parallax	1	28	47

ngle ☊ S M for the eclipse of the moon.
= 1° 13′ 21″ + 15 38″ = 1° 28′ 59″.
= 5 8½ . . . 8.952398
= 1 28 59 . . . 8.413067
. . . . . 10.

= 16 47 . . . 9.460669
or the lunar eclipse at a medium.

ngle ☊ S M for the eclipse of the sun.
= 1° 28′ 47″.
= 5 8½ . . 8.952398
= 1 28 47 . . 8.412009
. . . . . 10.

= 16 15 . . . 9.459611

the limit for the solar eclipse, in any place; about the same as for the lunar. But for a particular place, S M = 31 42; and S ☊ comes out only 5° 54′ for the limit.

698. 1. Hence there will at least be four eclipses in a year, taking one year with another; two of the moon, and two of the sun. For 16° 47′ + 16° 45 = 33° 32′ or 32½°. Therefore the sun stays above a month within the ecliptic limits twice in the year. During which time the moon makes two revolutions, and therefore must cause two eclipses, either time; one of the moon, and another of the sun.

699. 2. Half of the eclipses will, in general, be invisible at any given place. And consequently one year with another there can only be two visible eclipses in a year, the one lunar and the other solar. For the sun and moon spend as much time below the horizon as above it.

700. 3. The ecliptical limits may be found for total eclipses, as well as for partial ones, by the same method; i. e. by taking S M = the difference of the semidiameters of the earth's dark shadow and of the moon, in lunar eclipses; or = the difference of the semidiameters of the moon and sun, in solar eclipses.

701. 4. Eclipses do not always happen in the same places of the zodiac; but in places more and more westward. For the eclipses being about the nodes, and the nodes regressive at the rate of nineteen degrees in a year; the places of the eclipses are nineteen degrees more west every succeeding year.

702. From these premises it will be necessary, in calculating a particular eclipse, to consider the angle that the moon's way makes with the sun at the time of an eclipse. See plate XI. fig. 4. Let ☊ S be the ecliptic, ☊ M the moon's orbit, ☊ the node. And let S be the sun, in the solar eclipse; or the centre of the earth's shadow, in the lunar; and M the moon at the time of the syzygy. Take ☊ A to ☊ S as the sun's horary motion, to the moon's, at that time; draw M A, then M A S is the angle required; and A M the moon's apparent orbit.

703. For by construction, in the time that the moon has been moving from ☊ to M (that is, through ☊ S reckoned in the ecliptic,) the sun has moved through a space D S equal to ☊ A. Therefore the sun was in D, when the moon was in the node at ☊. Draw D B, M B parallel to S *m*, S D; and draw B ☊, which will be parallel to M A. Now since the moon makes the same latitude D B or S M, in the same time, whether the sun moves or stands still; and since S M is her latitude, when the sun is at S, D B (equal to S M) will be her latitude, supposing the sun had stood at D, without any motion towards S; and consequently ☊ B will be her apparent way, to an eye at D, through which she seems to move in the same time. Or, which is the same thing, A M will be her apparent way to an eye fixed at S.—For the triangles A M S are ☊ B D are equal; and M A S is the angle of her way with the ecliptic. By the theory of relative motions, in bodies moving the same way, all the apparent motions are the same, as if one body stood still and the other moved forward, with the difference of their motions. And here ☊ D or A S is the difference of their motions supposing S to be fixed

704. Hence, as the moon's horary motion : to the sun's horary motion :: S ☊ the distance from the node to A ☊. Then S A = S ☊ — A ☊. As sine of S A : rad :: tangent moon's latitude S M : tangent angle A.

705. It is the apparent orbit A M that must be made use of, in calculating all the particulars of an eclipse. For an observer considers not S as moving; and therefore only the relative motions are concerned. To calculate, therefore, an eclipse of the moon, the following rules will be found useful.

IV. Rules for Calculating Lunar Eclipses.

706. 1. Find the true time of the opposition, when an eclipse is to happen; and let that be reduced to apparent time.

707. 2. Find the true places of the sun and moon, when in opposition : 2. The sun's mean anomaly, and the place of his apogee : 3. The place of the moon's ascending node, and of her apogee, and her latitude.

708. 3. Let ☊ S, fig. 1, plate VIII. be a part of the ecliptic; ☊ M the moon's orbit; S the centre of the earth's shadow, and M the moon, when in opposition. Take ☊ A, to ☊ S which is known by calculation; as the sun's horary motion, to the moon's; which are known from the astronomical tables. Draw A M, for the way of the moon from the sun. Then in the right angled spherical triangle A S M, there is given A S (= ☊ S — ☊ A); and S M the moon's latitude found by calculation : to find the angle S M A.

709. 4. Let SP fall perpendicular to A M; then since the arches S M, M P, S P, are very small, they may be taken for right lines; and the triangle S M P for a plane triangle. Then having S M and angle S M P; M P and S P will be found, where P is the place of the moon in the middle of the eclipse. Likewise the time of the moon's moving through M P will be known by her horary motion; and from thence the time when she is at P, or the middle of the eclipse.

710. 5. From the astronomical tables, find the sun and moon's apparent semidiameters, for the time of opposition; and their horizontal parallaxes.

711. 6. From any convenient scale of equal parts, with the centre P and radius P B, equal to the minutes contained in the moon's radius, describe the circle B C *o* for the moon. And with the radius S D (equal to the sum of the sun and moon's horizontal parallaxes; the sun's semidiameter, all in minutes,) describe the circle D E B, from the centre S, then this circle will represent the earth's dark shadow. Likewise with the same centre S, and radius S F (equal to the sum of the sun and moon's parallaxes + the sun's semidiameter, in minutes,) describe the circle F Q G; and this will be the earth's penumbra.

712. 7. These rules being observed, it will be easy to find all the requisites by scale and compasses, by measuring them; or rather by calculation, in the several right-angled plain triangles, contained in the scheme. Thus, to find when the moon first touches the penumbra at L; in the right angled triangle S P K, there is given S P, and S K (the sum of the radii S L and P B), to find P K. Which being known, the time of the moon's passing through it will be known, by the moon's horary motion from the sun.

713. To find when the moon first enters the dark shadow of the earth in D: in the right angled triangle S P I, there is given S P, and S I, (the sum of the radii S D, P B,) to find P I; and consequently the time of half the duration in the shadow.

714. To find the digits, or 12th parts of the moon eclipsed. Here *no* the part eclipsed is = $Sn + Po - SP$; and $\frac{12\,no}{2\,Po}$ or $\frac{6\,no}{Po}$ is the number of digits eclipsed. In total eclipses of the moon, the earth's shadow often reaches farther than the moon. And then more than twelve digits are said to be eclipsed, supposing the moon's disk to be produced so far.

715. To find the time when the moon wholly enters into the dark shadow B E D, follow the same method as when it entered into the penumbra G Q F. This will be evident, by supposing G Q L the dark shadow. In that case S I will be the difference of the semidiameters of the moon and dark shadow. The times of passing through P I, P K, &c. being known, and the time of the middle of the eclipse at P, the beginning and end will be known.

716. 8. Hence, if the moon or circle C B *o* never touches the circle G Q F, there will be no eclipse, not even by the penumbra. And if the same circle never touches the circle B D E, there will be no part of the moon totally eclipsed. And if the whole circle C B *o* enter into the circle B E D, the whole moon will be totally eclipsed; and that is when S P is less than the difference of the semidiameters S D and P B. If the point S be in the node, then P falls upon S, and the eclipse is central. When only a part of the circle C B *o* goes into the circle B E D, the eclipse is a partial one, as in this figure.

717. 9. The time of the eclipse being known for any particular place, it is easy to know if it be visible at that place, by knowing if the moon be risen. Or the place will be known where the moon is vertical; and therefore it will be visible to all places within a quadrant's distance from it.

718. 10. If the spectator live in the place, (or in the same longitude) which the tables are calculated for; he will see the eclipse at the time determined by the calculation. If not, he will see it an hour sooner for every 15° difference of longitude, that he lives west from it. And so much later, if he lives eastward; that is, in the way of reckoning time. But in regard to absolute time, it is seen from all places at the same instant.

Example.

To find the time of the Lunar Eclipse, December 13th, 1769; its Duration and Digits eclipsed.

719. 1. The mean time of the syzygies, by the tables, is found to be December 12d. 19h. 27m. at which time the moon's horary motion from the sun is 35′ 33″. At this time, computing the true places of the sun and moon, the moon will

appear to be 35 10" before the sun. And therefore the time is past the syzygy, 59m. 12s. Therefore,

From	1d.	19h.	27m.	0s.
Take	0	0	59	12
True time	1	18	27	48

The places being computed again, the moon is only 7" before the sun, which amounts to 12" of time; therefore the time of opposition is 12d. 18h. 27m. 36s. which reduced to apparent time is December 12d. 18h. 32m 51s.

2.

The sun's place is . .	8s.	21°	37'	35"
The moon's place . .	2	21	37	35
Place of the ascending node	8	14	46	13
Her latitude south . .			37	58
The sun's horary motion			2	33
The moon's horary motion			38	6

3. Hence the moon is 6° 51' 22" past the descending node: that is ☊ S is 6° 51' 22". Therefore ☊ A = 17' 32", and A S = 6° 23' 50". Therefore the angle S M A = 84° 22' 28".

4. Hence drawing the ecliptic R S, and S M perpendicular to it, and equal to 37' 58" from a scale of minutes, as in fig. 12, plate IX. and making the angle S M A = 84° 22½'. We find the perpendicular S P = 7' 47", and M P = 3' 43". And therefore, the horary motion of the moon from the sun being 35' 33", P M will be passed over in 6' 17". And since this is before the opposition at M, this time must be deducted from the time of opposition. And the time of the middle of the eclipse will be December 12d. 18h. 26m. 34s.

5.

The sun's apparent semidiameter	16'	20"
His horizontal parallax		12
The moon's apparent semidiameter	16	48
Her horizontal parallax	61	7

6. Hence the radius B P = 16' 48".
radius S D = 44 59.
radius S F = 77 39.

7. Hence also P K or P k = 86 34.
and P I or P i = 48 53.

and therefore the time of passing through P K is 2h. 26m. 6s., and through P I = 1h. 22m. 30s. And the whole duration in the shadow from I to i, is 2h. 45m. And the digits eclipsed 8½ on the upper side. Whence,

	D.	H.	M.	S.	
First entering the penumbra December . . .	13	4	0	28	morn.
Entering the dark shadow at	0	5	4	4	
Middle	0	6	26	34	
Opposition	0	6	22	51	
Leaving the shadow . . .	0	7	49	4	
Leaving the penumbra . .	0	8	52	40	
Duration	0	2	45	0	
Digits eclipsed 8½					

720. All these calculations may be made sufficiently near, by scale and compasses, in a large draught; making use of a scale of minutes and sixtieth parts; or rather by making a scale of time answering thereto, by the help of the horary motion of the moon from the sun. For by this scale, the several hours and minutes may be marked along the line A k, by which it will appear at what time the centre of the moon is at any given point. For the time is known when the moon is at M, and from thence the points at each hour and minute are easily found. And this construction, with only right lines and circles, will be exact enough in a large figure; for the best lunar tables give the times of the phases of an eclipse no nearer than to four or five minutes of time; and therefore such a construction is sufficient to answer the purpose. Hence it may be observed, that no eclipse of the moon can last above five hours and a half from the moon's first touching the earth's penumbra, to its last leaving it. For S K = 94' 27" = 94·45, and the horary motion is 35' 33" = 35·55 and $\frac{94·45}{35·55}$ = 2·66 = 2h. 39m. = semiduration: and no eclipse of the moon, by the earth's shadow, can last above 3¾ hours. Nor when total, above 1¾ hours. For S I = 61' 47" = 61·78, and $\frac{61·78}{35·55}$ = 1·745 = 1' 45" = the semiduration, and S D − S I = 28' 11" = 28·18, and $\frac{28·18}{35·55}$ = ·79 = 47m. the semiduration.

721. The refraction of the earth's atmosphere, in lunar eclipses, makes the shadow less; by bringing the rays, which terminate the shadow, sooner to a point. And hence comes that red color of the moon even in total eclipses. But that light must be very dim, by reason of a great number of the rays being stopt and lost in the earth's atmosphere.

722. The circles terminating the shadow and the penumbra B E D and G Q F, cannot be distinguished. For the darkness from B E D, diminishes by insensible degrees, to G Q F, being darkest at E, and lightest at Q, where it vanishes insensibly. And therefore the moon does not appear to be eclipsed till she is a good way within the penumbra. For that reason, there may happen eclipses of the moon which cannot be discovered as such.

723. All lunar tables show the moon's place in eclipses, more truly in the syzygies than in the quadratures, or any other place. For the times of the syzygies, and the moon's place, have been more accurately observed in eclipses, than at any other time; and from thence the moon's theory has been deduced. Besides, many of the inequalities cease in the syzygies, but have sensible effects in other places; becoming greater, as the moon is further from the syzygies; being greatest in the quadratures. Whence the lunar tables do not determine the moon's place truly in the quadratures. And her place calculated from these tables is not so exact in the quadratures as in the syzygies.

724. Several inequalities depend on the aspect of the nodes and the sun; but these cease when the nodes are in the syzygies. When the moon and the nodes are in the syzygies, the moon's place, then wanting fewer equations, as being subject to fewer inequalities, will be more correct than when she is in other places, where there are more and greater inequalities, and more equations. From hence more errors will happen out of the syzygies than in them.

V.—To find the way of the Moon from the Sun, in a Solar Eclipse, supposing the Observer at rest.

725. Let H Z O, in plate IX. fig. 6, be the meridian of the place, H O the horizon, E C the equinoctial, E L the ecliptic, Z the zenith, P the pole, S and M the places of the sun and moon in conjunction, P S D the sun's meridian. Having found the sun's distance from the node, ☊ S, and the moon's latitude S M, &c. take ☊ A ☊ to S, as the sun's horary motion to the moon's horary motion; then S A is known. Draw M A; then in the spherical triangle A S M, right angled at S, there is given S A, S M; to find the angle S M A; A M being the moon's way from the sun.

726. But, as the eye of the observer is in motion, by the rotation of the earth, which gives an apparent motion to the moon, contrary to that of the observer, we must find the quantity and direction of that motion. As the observer is carried eastward, towards the point C, the apparent motion of the moon caused thereby will be in the line C S. And to determine the position of C S, in respect of A M or S M, several spherical triangles must be resolved, as follows:

727. In the right-angled triangle E D S there is given E S, and angle E to find D S, and angle E S D or A S P; or these may be easier had from the astronomical tables. And in the triangle Z P S, there is given P S (the complement of D S), the angle Z P S (from the time of the day), and Z P the complement of the latitude; to find Z S, and angles P Z S and Z S P. Then Z S P and A S P being known, Z S A will be known. And M S A being a right angle, Z S M will be known. In the right angled triangle C F S, there is given C F, the measure of the angle F Z C (the difference between the angle P Z S and the right angle C Z P), and S F the complement of Z S; to find C S, and the angle C S F or B S Z. Then B S Z and Z S M being known, B S M will be known. And S M A being known, its supplement S M B is known, and consequently the angle S B M.

728. To find the quantity of the motion. That along A M is already known; and to find the apparent motion along S B. The sine of 15° (the horary motion of a point in the equinoctial), is ·259 to the radius 1. And if h be the moon's horizontal parallax, then the radius of the earth appears at the moon under the angle h, and therefore 15° of the equinoctial appears under the angle of ·259 h; this then is the horary motion of a point in the equinoctial, viewed directly from the moon. And the moon's apparent motion seen from that point in the equinoctial is the very same. But this motion is to be diminished upon two accounts. 1. Because it is less in a parallel circle, in proportion to the cosine of the latitude. And 2. Upon account of the obliquity of the motion, when not perpendicular to the rays of the sun; and this will be as the sine of C S, the sun's distance from the east or west point of the horizon. Therefore to find the quantity of this motion.

To the logarithm of ·255 h.
Add the cosine latitude.
And the sine of C S.

Then the sum, abating twice radius, is the logarithm of this apparent horary motion. Then this motion is to be compounded with the motion along A M B as follows:

729. Let A S, plate IX. fig. 5, be a portion of the ecliptic, S B the way of the apparent motion, M A the moon's way from the sun. Draw N M parallel to S B; and let M N be the horary motion along S B or M N, and M I the horary motion of the moon from the sun. Then complete the parallelogram N M I Q; draw the diagonal M Q R, which is the direction of the motion, compounded of the observer's and the moon's motions, and M Q is the total apparent horary motion, supposing the observer at rest. Then in the plain triangle Q M I, there is given M I, and I Q (or M N), and the angle M I Q = M B S; to find the angle Q M I, and side M Q or the absolute horary motion. And the angles Q M I and I M S being known, Q M S is known.

730. If the sun be in the eastern hemisphere, in which case the concave side of the eastern hemisphere is here projected (in fig. 6), then the moon's motion from the sun is from M towards A, and the other apparent motion from S towards B, or from M towards N. But if the sun is in the western hemisphere, this projection represents the convex side of the sphere; and then the moon moves from the sun, in direction A M, and the other apparent motion is from S towards C, being contrary.

VI.—To Calculate Solar Eclipses.

731. The eclipses of the sun are more difficult to calculate than those of the moon; the latter being clear of parallaxes, which the former are incumbered with, which gives a great deal trouble. But a great part of it may be avoided by using projections instead of calculations. The rules are,

732. 1. Find the true time of the conjunction, and the places of the sun and moon at that time.

733. 2. Having found the way of the moon from the sun by projection or calculation; find, by the astronomical tables, the moon's horizontal parallax, her apparent diameter, and horary motion, also the sun's apparent diameter and horary motion. But, to avoid a great deal of calculation, if the sphere be projected by a large scale, it will give all the requisites with sufficient exactness, by measuring the several angles and sides, without any calculation, or very little. And here it is best to project the concave side, and then every thing appears as it is in nature.

734. 3. Find the moon's parallax of altitude, by making as rad. : cos. altitude : : so the moon's horizontal parallax : to her parallax of altitude V t or M m. fig. 8. Then find her parallax of latitude M m, and longitude S s, or m n, and from thence her apparent latitude and longitude is known.

735. 4. Draw the line S L, fig. 10, for the ecliptic, and from a large scale of minutes, erect S M perp. to L S, and equal to the apparent latitude; make the angle S M R, as found in the last prob. and draw ☊ M R for the moon's apparent path. From S let fall S P perpendicular to M R, and S P will be the least distance of the centres of the sun and moon, or the middle of

the eclipse. From the centre S, with the radius equal to the minutes contained in the sun's semidiameter, describe the circle A B C for the sun. And from the centre P, with the radius equal to the moon's semidiameter, describe the circle A O C D for the moon. If these circles do not intersect, there will be no eclipse. But if they intersect, an eclipse must necessarily happen.

736. 5. Then P is the place of the moon in the middle of the eclipse. Make S I and S K equal to the sum of the semidiameters of the sun and moon; and the moon's centre will be at I when the moon first touches the sun, or at the moon's centre, at the end of it. In the triangle P S I, there is given SI, S P; to find P I = P K, which reduced to time by help of the moon's apparent horary motion, shews half the duration of the eclipse; and consequently we shall have the beginning and end.

737. 6. And to find the quantity $n\,o$, or the digits eclipsed; we have $n\,o = \mathrm{S}n + \mathrm{P}o - \mathrm{SP}$, and $\frac{6no}{\mathrm{P}o}$ = number of digits.

738. 7. The time found being mean time, it must be reduced to the common or apparent time, by the equation of time. And if the given place be not that for which the tables are made, add so much time, if the place lie eastward, to the time of conjunction, as answers to the difference of meridians; or subtract it if it lie westward.

EXAMPLE.

TO FIND THE TIME OF THE SUN'S ECLIPSE, JUNE 4, 1769, ITS DURATION AND DIGITS ECLIPSED AT LONDON.

739. 1. By the tables the mean time of the conjunction is found to be June 2d. 20h. 41m. And hence, the true time of conjunction is June 3d. 20h. 27m. 43s. And their places are 2ˢ 13° 51' 23". And the moon's lat. 55·32 north. The moon's motion from the sun 35' 47".

2. In fig. 5 and 6, Plate IX. the angle A M S = 84° 47'. Z S M = 35° 20'. C S F = 5° 18'. S S M = 43° 49'. S F = 42° 16', C F = 3° 34'. C S = 42° 24'. The angle Q M I = 8° 25'. S M Q = 92° 52'. M N or I Q = 6° 38'. M Q = 31° 20'. Also

The moon's horizontal parallax . .	60'	58"
Her apparent diameter	33	32
Her horary motion	38	10
The sun's diameter	31	41
His horary motion	2	23

3. In fig. 4, the moon's parallax in altitude M N is 45' 09"; her parallax in latitude M n, 38' 06"; her remaining latitude S n, 17' 26"; her parallax in longitude S s, 24' 13"; which is increased so much.

4. Draw S L for the ecliptic, as in fig. 10, at any point S, erect the perp. M S equal to 17' 26", the moon's apparent latitude; through M draw the moon's way ☊ M R, making the angle S M R = 92° 52'. Draw S P perp. M R, which here falls very near M. From the centre S, with the radius S A = 15' 50", describe the circle A B C for the sun. And with the radius M D = 16' 46", and centre P, describe the circle A D C O for the moon.

5. Hence P I or P K = 27' 33". And the time of moving through I P or P K, at the rate of 31' 20" an hour, is 52' 45" for the semiduration. By reason of the parallax (24' 13"), she is past the apparent conjunction; the difference being what the parallax causes, which comes to 47' 23". Therefore the middle of the eclipse is so much sooner, being at 3d. 19h. 41m. 20s This reduced to apparent time is 3d. 19h. 43m. 27s. for the middle.

6. The digits eclipsed are 5 $\frac{4}{10}$, nearly.

740. In this example, the concave side of the sphere is projected, which suits best to the appearance of the heavens. And the figures are drawn upon that supposition. It appears from the process, that the moon is advancing to her descending node, and therefore has north latitude. And by the position of that part of the ecliptic, her parallax in longitude, advances her so much forward, viz. 24' 13". And therefore she is so much past the apparent conjunction. Hence we gain these several particulars, as to the eclipse:

	D.	H.	'	"
741. 1. The begin. June, morn.	4	6	53	42
middle	4	7	43	27
end	4	8	46	12
total duration . . .		1	45	30

digits eclipsed 5½, on the upper side of the sun, towards the left; as appears by the figure.

742. 2. Hence the position of the horns at C and A, are easily found in the middle of the eclipse. For they are in a position parallel to R I, the moon's way.

743. 3. The middle of the eclipse will not be at the same time in all places of the same longitude; for the parallax of longitude will be different in different places.

744. No eclipse of the sun can last above two hours. For S I or S A + M D = 32' 26" = 32.6 and the horary motion = 34' 47" = 35.78. And $\frac{32.6}{35.78}$ = ·91 = 54½ minutes, for the semiduration.

745. If it were not for the parallax, eclipses of the sun would be as easily calculated as those of the moon. And in order to get the parallax, the angle Z S M and S P must be known, fig. 2, which occasions the resolving several spherical triangles before they can be had. Likewise it may be observed, that the apparent way of the moon is strictly curve line, concave towards S, which arises from the parallel of latitude being a curve, and the moon being out of its plane. Likewise the moon's apparent velocity is something greater at the beginning than at the end.

VI.—RULES FOR CALCULATING A GENERAL ECLIPSE OF THE SUN.

746. The elements necessary for this are: 1. The sun and moon's place, and the time at the true conjunction; 2. The moon's latitude, horizontal parallax, diameter, and horary motions; 3. The sun's declination, diameter, and horary motion; and 4, the angle the moon's way makes with a circle of latitude.

747. 2. From a large scale of minutes, take the moon's horizontal parallax in the compasses, and at any point C, in the right line B D, (which represents the ecliptic in plate XI. fig. 6), describe the circle A B E D, for the earth's disk, or the earth's flat face as it appears at a distance, in

line drawn to the sun. Draw C M perpendicular to C D, and equal to the latitude of the moon upwards, if north. Make the angle C M G equal to that which the moon's way makes with a circle of latitude; acute to the right hand, if she tend to the node; or obtuse, if she be past it; and drawing F M G, it will be the way of the centre of the moon's shadow upon the earth. From C let fall C H perpendicular to F G. Then at H will be the middle of the earth's eclipse.

748. 3. With the centre H, and radius H O, equal to the sum of the semidiameters of the sun and moon, describe the circle Q O R, which will be the moon's penumbra. Also describe a small circle round the centre H, whose radius is the difference of the sun and moon's semidiameters, that little circle will be the dark shadow of the moon. Then all the countries of the earth contained in the segment V A W will be successively eclipsed by the penumbra, as the shadow moves along the tract F G; while the other segment V E W suffers no eclipse at all. All places in the line *s t* will be totally eclipsed, as the dark shadow, or the small circle at H passes successively over them. But this circle, or dark shadow, being very small, a total eclipse at any place continues but a small time. Sometimes the sun's semidiameter exceeds the moon's; and then there will be no dark circle, or total eclipse, but a lucid ring will appear about the moon in these places, and this is called an annular eclipse. The difference between the semidiameters of the sun and moon is so little, that no total eclipse lasts above four minutes.

749. 4. Draw C F, C G = sum of the semidiameters of the sun and moon, and the moon's parallax; then the moon's shadow will touch the earth at L and K, where the eclipse begins and ends. In the triangle C F H, there is given C F, C H; to find F H = H G, which, converted into time, gives half the duration, or half the time that the moon's shadow is upon the earth. Also N O measured, shews how far the eclipse reaches; or C O measured, does the same. It may be sufficient to measure all these by the scale without calculation.

750 5. To find the pole. Draw the arch A P, making the angle K A P equal to the sun's longitude, and A P the distance of the poles of the equator and ecliptic, 23°½; then P is the pole. For A P is a part of the solstitial colure, and passes through Cancer and Capricorn. And C A P is what the sun wants of Cancer, therefore P A K is what it is past Aries. Through P draw C P T. And here we may suppose that the pole P is fixed during the time of an eclipse. Then in the right angled spherical triangle A P T, there is given A P and the angle A, to find A T or angle A C P. In this triangle P T is the sun's declination, and A P T or C P K his right ascension from Cancer. Here note, that any place in the line C T is in the sun's meridian; and C is the place where the sun is vertical at the time of the eclipse.

751. 6. To find the situation of any given place, at a given hour. Make the angle C P X (with the sun's meridian), equal to the time from noon; on the left hand, if it is before noon. And make P Z the complement of the latitude; then Z is the place required. And if it falls in t penumbra, it is eclipsed; or anywhere in t segment V A W; if its motion in the parall circle does not carry it out, before the penumb reaches it.

752. 7. To find the place which is first last touched by the penumbra, as K. Draw t arch P K. In the triangle G C A, there a given C G and C H, to find the angle G C from which subtract H C P which is known, giv the angle P C K or T K. Then in the right-angl spherical triangle P T K, there is given T K, a P T the sun's declination; to find P K the com plement of the latitude of K, and T P K or C P the difference of longitude of K, and the sun.— Therefore its longitude and latitude is obtaine In the same manner may be found that of L. An by the same method the latitude and longitud of the places *s* and *t* may be found, where th dark shadow first enters the earth's disk, or quit leaves it. Thus also may be found the place which is in the line F H, at any point of time: or if the place be given, what the time will be; and that by help of the horary motion, with other particulars of like nature.

753. 8. The part of the sun's diameter eclipsed by the moon, is known by the situation of the place within the penumbra, or its distance from the centre of the penumbra. And the phasis of the eclipse, as seen from any place Z, upon the disk, will be found thus, for any time. Find the centre of the shadow for that time, as suppose at H. Describe about H, a circle, whose radius is the moon's radius, and about Z, a circle with the sun's radius. Then the part cut off the sun's circle will be the part obscured.

SECT. VIII.—REMARKS ON ECLIPSES IN GENERAL.

754. In eclipses of the moon, even when she is near the centre of the earth's shadow, her body is still visible, and appears of a tarnished copper color. This seems to be occasioned by the rays of light which come from the sun, and which passing near the earth, are inflected from their rectilinear course by our atmosphere; so that they enter the earth's conical shadow, thus producing that faint illumination on the surface of the moon, which some have supposed to be her own native light; but there seems to be no just ground for such a conjecture.

755. In most solar eclipses, the moon's disk is covered with a faint light, which is attributed to the reflection of the light from the illuminated part of the earth; and in total eclipses, the moon's limb is seen surrounded by a pale circle of light: which some astronomers consider as an indication of a lunar atmosphere, but others as the atmosphere of the sun; because it is observed to move equally with the sun, but not with the moon.

756. Eclipses have in all ages greatly attracted the attention of mankind. The ignorant and superstitious have viewed them with terror, and in former ages they were often considered as the forerunners of national calamities. The Chinese even at the present day, upon their appearance perform the most absurd and superstitious cere monies, although they are so far acquainted wit their nature, as to be able to predict them. Se CHINA. But true philosophy has taught us, th

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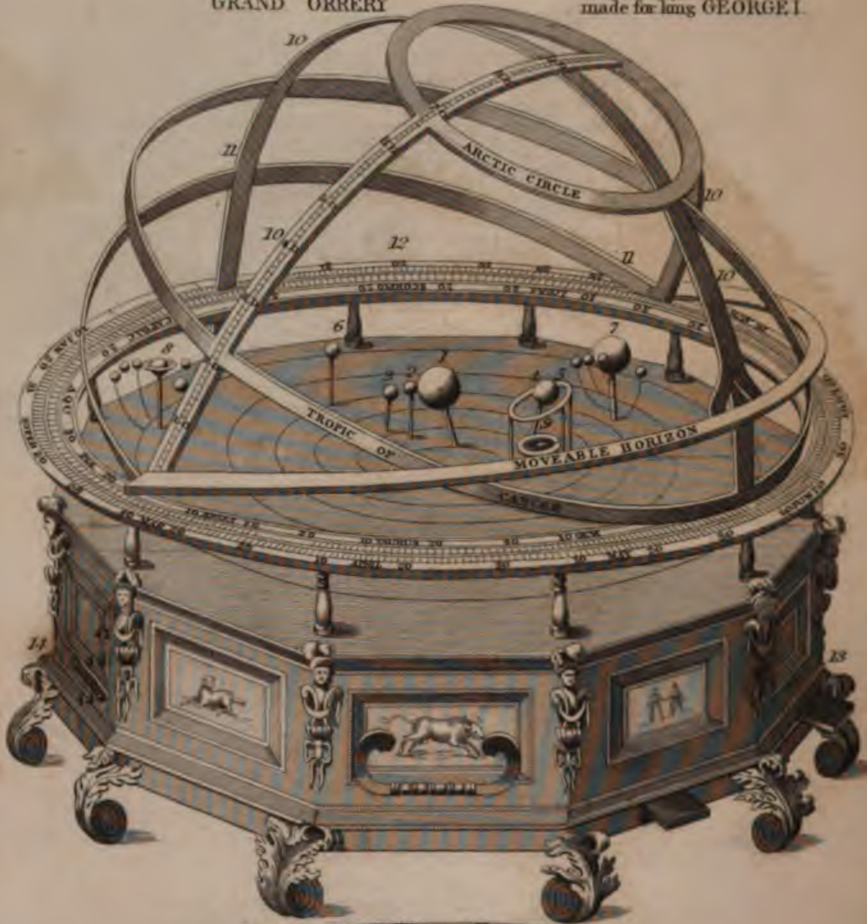

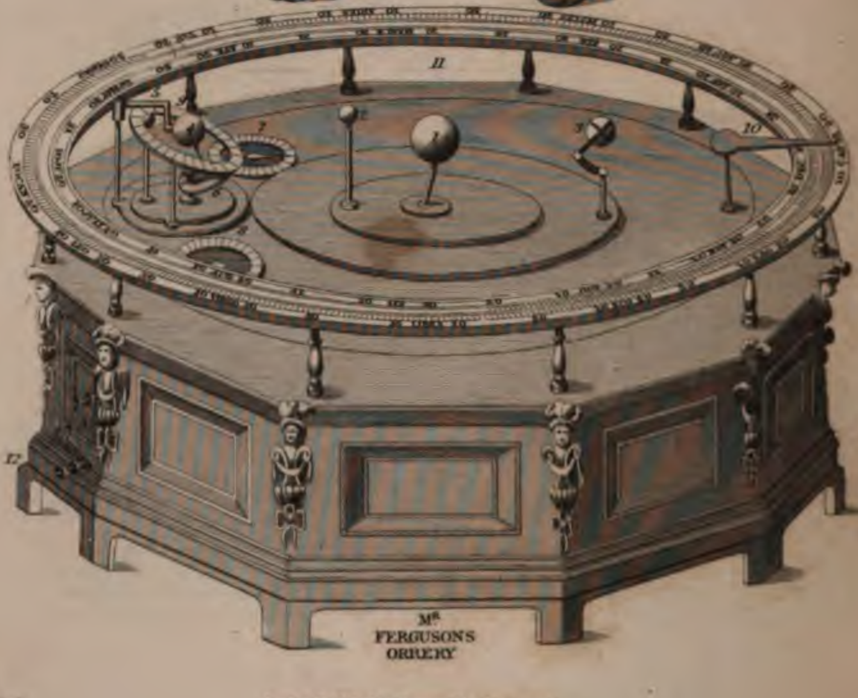

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instead of these appearances being portentous of evil to mankind, they may, by proper observations upon them, be made of great advantage to the sciences, and to some of the arts of life.

757. We have already shewn, that, by eclipses of the moon, the earth is demonstrated to be a globular figure. The longitudes of places on the earth are also determined by observations on solar and lunar eclipses; as will appear by consulting the articles GEOGRAPHY, LONGITUDE, NAVIGATION, &c. Eclipses are also of great importance in CHRONOLOGY, (which see), as by them we are enabled to determine exactly the time when events recorded in history happened.

758. From the observations made upon the ancient eclipses, it appears that the period of the moon is now shorter, and consequently that her distance from the earth is now less, than in former ages; and this has been considered as an argument against those who assert, that the world may have existed from eternity; for it was hence inferred, that the moon moves in a resisting medium, and therefore that her motion must by degrees be all destroyed, in which case she must at last come to the earth. But M. de La Place has shewn, that this acceleration of the moon's period is a necessary consequence of universal gravitation, and that it arises from the action of the planets upon the moon. He has also shewn that this acceleration will go on, till it arrive at a certain limit, when it will be changed into a retardation; or in other words, that there are two limits, between which the lunar period fluctuates, but neither of which it can pass.

759. M. de La Grange has also discovered, that all the seeming irregularities in the motions of our system are periodical; so that although the obliquity of the ecliptic, the eccentricities of the planetary orbits, the precession of the equinoxes, the length of the year, &c. may change, yet these changes will not pass certain limits, and after stated periods, they will return precisely to what they had formerly been. Some of these periods, however, may be very long. The acceleration of the moon, for example, has been going on from the earliest ages of astronomy to the present day.

760. We cannot close this section, without observing, that eclipses happen very frequently to all the satellites of Jupiter; and, as they are of great service in determining the longitude of places on the earth, astronomers have been at pains to calculate tables for the eclipses of these satellites by their primary; for the satellites themselves have never been observed to eclipse one another. But this falls more properly to be considered under the articles GEOGRAPHY, and LONGITUDE, to which the reader is therefore referred.

761. The primary planets would also eclipse one another, were it not for their great distances; but, as the comets are not subject to the same laws with the planets, it is possible they may sometimes approach so near to the primary planets, as to cause an eclipse of the sun to those planets; and as the body of a comet bears a much larger proportion to the bulk of a primary planet than any secondary, it is plain, that a cometary eclipse would both be of much longer continuance and attended with greater darkness, than that occasioned by a secondary planet. If we suppose the primary planet and comet to be moving both the same way, the duration of such an eclipse would be prodigiously lengthened; and thus, instead of four minutes, the sun might be totally darkened to the inhabitants of certain places for as many hours: and, from this cause, some account for that prodigious darkness, which we sometimes read of in history, at times when no eclipse of the sun by the moon could possibly happen.

PART V.

ASTRONOMICAL MACHINERY AND INSTRUMENTS.

SECT. I.—DESCRIPTION OF THE ASTRONOMICAL MACHINERY INVENTED FOR ILLUSTRATING THE SCIENCE.

762. The Grand Orrery, a very magnificent machine, first made in this kingdom, by Mr. Rowley, for king George I. is represented in plate XII. fig. 1. The frame of it, which contains the wheel-work, &c. and regulates the whole machine, is made of ebony, and about four feet in diameter. Above the frame is a broad ring, supported with twelve pillars, which represents the plane of the ecliptic. Above the ecliptic, stand some of the principal circles of the sphere, viz. No. 10, are the two colures divided into degrees, and half degrees; No. 11, is one half of the equinoctial circle, making an angle of 23½°. The tropic of Cancer, and the arctic circle, are each fixed parallel, at their proper distance from the equinoctial. On the northern half of the ecliptic, is a brass semicircle, movable upon two points, fixed in ♈ and ♎, representing the movable horizon to be put to any degree of latitude upon the north part of the meridian, and the whole machine may be set to any latitude, without disturbing any of the internal motions, by two strong hinges, (No. 13.) fixed to the bottom-frame, upon which the instrument moves, and a strong brass arch, having holes at every degree, through which a strong pin is put at every elevation. This arch, and the two hinges, support the whole machine, when it is lifted up, according to any latitude; and the arch, at other times, lies conveniently under the bottom frame.

763. The sun, (No. 1.) stands in the middle of the whole system, upon a wire, making an angle with the ecliptic, of about 82°. Next the sun is a small ball, (2), representing Mercury. Next to Mercury is Venus, (3), represented by a larger ball. The earth is represented (No. 4), by an ivory ball, having some circles and a map sketched upon it. The wire which supports the earth, makes an angle with the ecliptic, of 66½°, the inclination of the earth's axis to the ecliptic. Near the bottom of the earth's axis is a dial plate, (No. 9.) having an index, pointing to the hours of the day, as the earth turns round its axis. Round the earth is a ring supported by two small pillars, representing the orbit of the moon; and the divisions upon it answer to the moon's latitude. The motion of this ring represents the motion of the moon's orbit, according to that of the nodes. Within this ring is the moon, (No. 5), having a black cap or case, by

which its motion represents the phases of the moon, according to her age. Without the orbits of the earth and moon, is Mars, (No. 6.) The next in order to Mars is Jupiter, and his four moons, (No. 7.) Each of these moons is supported by a wire fixed in a socket, which turns about the pillar supporting Jupiter. These satellites may be turned by the hand to any position, and yet, when the machine is put into motion, they will all move in their proper times. The outermost of all is Saturn, his five moons, and his ring, (No. 8.) These moons are supported and contrived, similar to those of Jupiter.

764. The machine is put in motion, by turning a small winch, (No. 14); and the whole system is also moved by this winch, and by pulling out, and pushing in, a small cylindrical pin above the handle. When it is pushed, all the planets, both primary and secondary, will move according to their respective periods, by turning the handle. When it is drawn out, the motions of the satellites of Jupiter and Saturn will be stopped, while all the rest move without interruption. There is also a brass lamp, having two convex glasses, to be put in room of the sun; and also, a smaller earth and moon, made somewhat in proportion to their distance from each other, which may be put on at pleasure. The lamp turns round at the same time with the earth, and the glasses of it cast a strong light upon her; and when the smaller earth and moon are placed on, it will be easy to show when either of them will be eclipsed.

765. Mr. Ferguson's orrery, plate XII. fig. 2, shows the motions of the Sun, Mercury, Venus, Earth, and Moon; and occasionally the superior planets, Mars, Jupiter, and Saturn may be put on. Jupiter's four satellites are put round him in their proper times, by a small winch; and Saturn has his five satellites, and his ring, which keeps its parallelism round the sun; and by a lamp put in the sun's place, the ring shows all its various phases already described. In the centre, No. 1, represents the sun; No. 2, Mercury; No. 3, Venus; No. 4, the earth; No. 6, is a siderial dial-plate under the earth; and No. 7, a solar dial-plate on the cover of the machine. The index of the former shows siderial time, and of the latter, solar time.

766. The earth always keeps opposite to a moving index, (No. 10), which shews the sun's daily change of place, and also the days of the months. The earth is half covered with a black cap, for dividing the apparently enlightened half next the sun, from the other half, which, when turned away from him, is in the dark. The edge of the cap represents the circle bounding light and darkness, and shows at what time the sun rises and sets to all places throughout the year. The earth's axis inclines 23½° from the axis of the ecliptic; by which means, the different lengths of days and nights, and the cause of the various seasons, are demonstrated to sight.

767. There is a broad horizon, to the upper side of which is fixed a meridian semicircle, in the north and south points. From the lower side of this thin horizontal plate stand out four small wires, to which is fixed a twilight-circle, eighteen degrees from the graduated side of the horizon, all round. This horizon may be put upon the earth (when the cap is taken away), and rectified to the latitude of any place; and then by a small wire, called the solar ray, which may be put on, so as to proceed directly from the sun's centre towards the earth's, but to come no farther than almost to touch the horizon. The beginning of twilight, time of sun rising, with his amplitude, meridian altitude, time of setting, amplitude then, and end of twilight, are shown for every day of the year, at that place to which the horizon is rectified.

768. The moon, (No. 5.) exhibits all the phases already described. When the horizon is rectified to the latitude of any given place, the times of the moon's rising and setting, together with her amplitude, are shown to that place, as well as the sun's; and all the various phenomena of the harvest moon are made obvious to sight. The moon's orbit, (No. 9.) is inclined to the ecliptic, (No 11.) one half being above, and the other below it. The nodes, or points at 0 and 0, lie in the plane of the ecliptic, as before described, and shift backward, through all its sines and degrees, in 18⅔ years.

769. The degrees of the moon's latitude, to the highest in NL, (north latitude,) and lowest at SL, (south latitude,) are engraven both ways from her nodes at 0 and 0; and, as the moon rises and falls in her orbit, according to its inclination, her latitude and distance from her nodes are shown for every day, having first rectified her orbit, so as to set the nodes to their proper places in the ecliptic; and then, as they come about, at different, and almost opposite times of the year, and then point towards the sun, all the eclipses may be shown for hundreds of years (without any new rectification), by turning the machinery backward, for time past, or forward for time to come.

770. At 17° distance from each node, on both sides, is engraved a small sun; and at 12° distance a small moon, which show the limits of solar and lunar eclipses; and when, at any change, the moon falls between either of these suns and the node, the sun will be eclipsed on the day pointed to by the annual index, (No. 10). And when at any full, the moon falls between either of the little moons and node, she will be eclipsed, and the annual index shows the day of that eclipse. There is a circle of 29½ equal parts (No. 8) on the cover of the machine, on which an index shows the days of the moon's age. There is a jointed wire, of which, one end being put into a hole in the upright stem that holds the earth's cap, and the wire laid into a small forked piece which may be occasionally put upon Venus or Mercury, shows the direct and retrograde motions of these two planets, with their stationary times and places, as seen from the earth. The whole machinery is turned by a winch, (No. 12) and is so easily moved, that a clock might turn it, without any danger of stopping.

771. Mr. Jones's Planetarium, plate XI. fig. 1, represents in a general manner, by various parts of its machinery, all the motions and phenomena of the planetary system. This machine consists of, the Sun in the centre, with the planets, Mercury, Venus, the Earth and Moon,

Mars, Jupiter and his four moons, Saturn and his five moons; and to it is occasionally applied an extra long arm for the planet Herschel and his two moons. To the earth and moon is applied a frame C D, containing only four wheels and two pinions, which serve to preserve the earth's axis in its proper parallelism in its motion round the sun, and to give the moon her due revolution about the earth at the same time. These wheels are connected with the wheel-work in the round box below, and the whole is set in motion by the winch H. The arm M, which carries round the moon, points out on the plate, B, her age and phases for any situation in her orbit, and which accordingly are engraved thereon. In the same manner the arm points out her place in the ecliptic B, in signs and degrees, called her geocentric place. The moon's orbit is represented by the flat rim A; the two joints of which, and upon which it turns, denoting her nodes. This orbit is made to incline to any desired angle. The earth of this instrument is usually made of a three inch or 1½ globe, papered, &c. for the purpose; and by means of the terminating wire that goes over it, points out the changes of the seasons, and the different lengths of days and nights more conspicuously. This machine is also made to represent the Ptolemaic system, or such as is vulgarly received; which places the earth in the centre, and the planets and sun revolving about it. This very excellent instrument may justly be considered as the best devised piece of apparatus that has ever been contrived for the purpose.

772. The true causes of the solar and lunar eclipses are here very clearly seen; for by placing the lamp, fig. 5, plate XI., upon the centre, instead of the brass ball denoting the sun, and turning the winch until the moon comes into a right line between the centres of the lamp (or sun) and the earth, the shadow of the moon will fall upon the earth On the other side, the moon passes (in the aforesaid case) through the shadow of the earth, and is by that means eclipsed. And the orbit A, fig. 1, is so movable on the two joints called nodes, that any person may easily represent the due position of the nodes and intermediate spaces of the moon's orbit; and thence show when there will, or will not be, an eclipse of either luminary, and what the quantity of each will be. While the moon is continuing to move round the earth, the lamp on the centre will so illuminate her, that all her phases, as new, dichotomised, gibbous, full, waning, &c. will be seen just as they appear in the heavens. All the same phases of the earth, as they appear at the moon, will also be exhibited. The satellites of Jupiter and Saturn are movable only by the hand; yet all their phenomena may be easily represented, excepting the true relative motions and distances.

773. The Trajectorium Lunare, fig. 8, plate XIII., is intended, by delineating the paths of the earth and moon, to show what sort of curves they make in the ethereal regions. S is the sun, and E the earth, whose centres are ninety-five inches distant from each other; every inch answering to 1,000,000 of miles. M is the moon, whose centre is $\frac{24}{100}$ parts of an inch from the earth's in this machine, this being in just proportion to the moon's distance from the earth. A A is a bar of wood, to be moved by hand round the axis *g*, which is fixed in the wheel Y The circumference of this wheel is to the circumference of the small wheel L, below the other end of the bar, as 365¼ days to 29½, or as a year is to a lunation. The wheels are grooved round their edges, and in the grooves is the catgut string G G, crossing between the wheels at X. On the axis of the wheel L, is the index F, in which is fixed the moon's axis M, for carrying her round the earth E, fixed on the axis of the wheel L in the time that the index goes round a circle of 29½ equal parts, which are the days of the moon's age. The wheel Y has the months and days of the year all round its limb; and in the bar A A is fixed the index *l*, which points out the days of the months answering to the days of the moon's age, shewn by the index F, in the circle of 29½ equal parts at the other end of the bar. On the axis of the wheel is put the piece D, below the cock C, in which this axis turns round; and in D are put the pencils *e* and *m*, directly under the earth C and moon M; so that *m* is carried round *e* as M is round E.

774. Lay the machine on an even floor, pressing gently on the wheel Y, to cause its spiked feet (of which two appear at P, the third being supposed to be hid from the sight by the wheel) to enter a little into the floor to secure the wheel from turning. Then lay a paper about four feet long under the pencils *e* and *m*, cross-ways to the bar; which done, move the bar slowly round the axis *g* of the wheel Y; and as the earth E goes round the sun S, the moon M will go round the earth with a duly proportioned velocity; and the friction wheel W, running on the floor, will keep the bar from bearing too heavily on the pencils *e* and *m*, which will delineate the paths of the earth and moon. As the index I points out the days of the months, the index F shows the moon's age on these days, in the circle of 29½ equal parts. And, as this last index points to the different days in its circle, the like numeral figures may be set to those parts of the curves of the earth's and moon's paths, where the pencils *e* and *m* are at those times respectively, to shew the places of the earth and moon. If the pencil *e* be pushed a very little off, as if from the pencil *m*, to about $\frac{1}{40}$ part of their distance, and the pencil *m* pushed as much towards *e* to bring them to the same distances again, though not to the same points of space; then *m* goes round *e*, *e* will go as it were round the centre of gravity between the earth *e* and moon *m*; but this motion will not sensibly alter the figure of the earth's path or that of the moon's.

775. If a pin, as *p*, be put through the pencil *m*, with its head towards that of the pin *q*, in the pencil *e*, its head will always keep thereto as *m*, goes round *e*, or as the same side of the moon is still obverted to the earth. But the pin *p*, which may be considered as an equatorial diameter of the moon, will turn quite round the point *m*, making all possible angles with the line of its progress, or line of the moon's path. This is

an ocular proof of the moon's turning round her axis.

SECT. II. OF THE PRINCIPAL INSTRUMENTS USED FOR MAKING ASTRONOMICAL OBSERVATIONS.

776. In practical astronomy it is necessary to have a place conveniently situated, and suitably furnished with proper astronomical instruments. It should have an uninterrupted view from the zenith down to, or even below, the horizon, at least towards its cardinal points. For this purpose that part of the roof in particular which lies in the direction of the meridian, should have moveable covers, which may easily be moved and put on again; by which means an instrument may be directed to any point of the heavens between the horizon and zenith, either northward or southward. This place, called an observatory, should contain some, if not all, of the following instruments:

777. 1. A pendulum clock for showing equal time. This should show time in hours, minutes, and seconds; and with which the observer, by hearing the beats of the pendulum, may count them by his ear, while his eye is employed on the motion of the celestial object he is observing. Just before the object arrives at the position described, the observer should look on the clock and mark the time, suppose it 6h. 15min. 25sec.; then saying, 25, 26, 27, 28, &c. responsive to the beat of the pendulum, till he sees through the instrument the object arrived at the position expected; which suppose to happen when he says 38, he then writes down 9h. 15m. 38sec. for the time of observation, annexing the year and the day of the month.

778. 2. An achromatic refracting telescope, or a reflecting one, of two feet at least in length, for observing particular phenomena. See the description under OPTICS.

779. 3. A micrometer, for measuring small angular distances. See MICROMETER

780. Astronomical quadrants, both mural and portable, for observing meridian and other altitudes of the bodies.

781. 4. The mural quadrant, so called from murus a wall: it is in the form of a quarter of a circle, contained under two radii at right angles to one another, and an arch equal to one fourth part of the circumference of the circle. This is the most useful and valuable of all the astronomical instruments; and, as it is sometimes fixed to the side of a stone or brick wall, and the plane of it erected exactly in the plane of the meridian, it receives the name of mural quadrant. Tycho Brahe was the first person who applied this arch to a wall; and Flamsteed the first in England who, with indefatigable pains, fixed one up in the royal observatory at Greenwich.

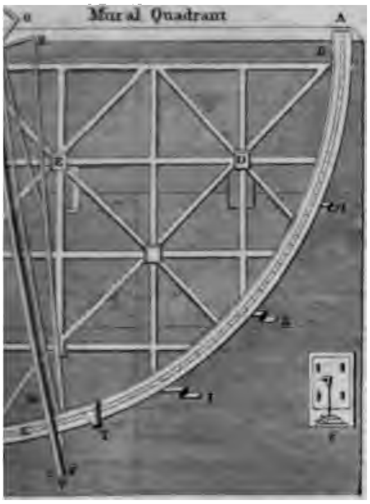
782. Mural quadrants have usually been made from five to eight feet radius. Fig. 1, plate XIII. represents the instrument fixed to the wall. The frame is formed of flat bars, and strengthened by edge bars, fixed underneath perpendicular to them. The radii H B, A A, being divided each into four equal parts, serve to find the points D and E, by which the quadrant is freely suspended on its iron supports, that are fastened in the wall. One of the supports, E, is represented separately in *e* on one side of the quadrant. It is moveable by means of a long slender rod E F or *e f*, which goes into a hollow screw in order to restore the instrument to its situation when it is discovered to be a little deranged. This may be known by the very fine perpendicular thread H A, which ought always to coincide with the same point A of the limb, and carefully examined to be so by a small magnifying telescope at every observation.

783. In order to prevent the unsteadiness of so great a machine, there should be placed behind the limb four copper ears with double cocks, I, K, I, K. There are others along the radii H A and H B; each of these cocks contains two screws, into which is fastened the ears that are fixed behind the quadrant. Over the wall of stone which supports the instrument, and at the same height as the centre, is placed horizontally the axis P O, which is perpendicular to the plane of the instrument, and which would pass through the centre if it was continued. This axis turns on two pivots P. On this axis is fixed at right angles another branch, O N, loaded at its extremity with a weight, N, capable of equipoising with its weight that of the telescope L M; whilst the axis, by its extremity nearest the quadrant, carries the wooden frame P R M, which is fastened to the telescope in M. The counterpoise takes off from the observer the weight of the telescope when he raises it, and hinders him from either forcing or straining the instrument. The lower extremity, V, of the telescope, is furnished with two small wheels, which take the limb of the quadrant on its two sides. The telescope hardly bears any more upon the limb than the small friction of these two wheels; which renders its motion so extremely easy and pleasant, that by giving it with the hand only a small motion, the telescope will run of itself over a great part of the limb, balanced by the counterpoise N.

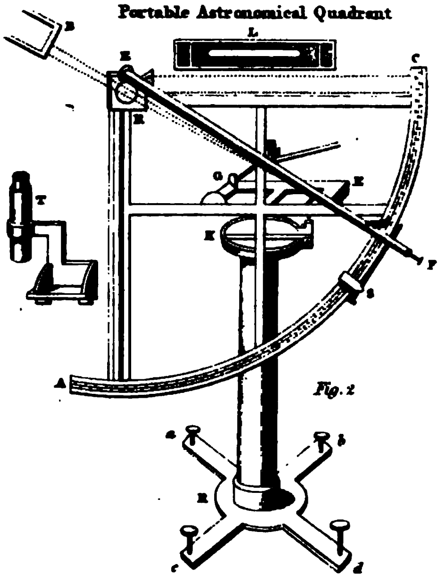
784. When the telescope is to be stopped at a certain position, the copper hand T is to be made use of, which embraces the limb and springs at the bottom. It is fixed by a setting screw, which fastens it to the limb. Then, in turning the regulating screw, the telescope will be advanced; which is continued until the star, or other object whose altitude is observing, be on the horizontal fine thread in the telescope. Then on the plate X, supporting the telescope, and carrying a vernier or nonius, will be seen the number of degrees and minutes, and even quarter of minutes, that the angular height of the object observed is equal to. The remainder is easily estimated within two or three seconds nearly.

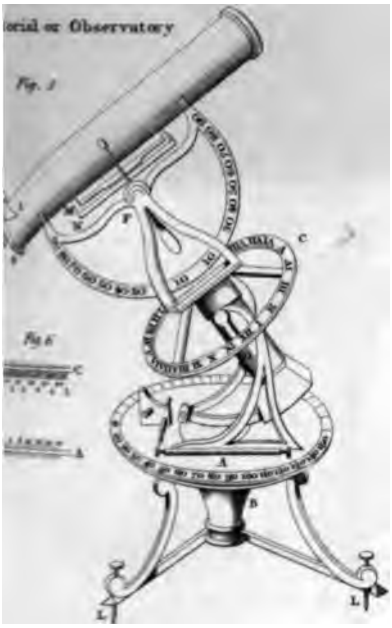
785. There are several methods of subdividing the divisions of a mural quadrant, which are usually from five or ten minutes each; but that which is most commonly adopted is by the vernier or nonius, the invention of Peter Vernier, a Frenchman. This vernier consists of a piece of copper or brass, C D A B, fig. 6, which is a small portion of X, fig. 1, represented separately. The length, C D, is divided into twenty equal parts, and placed contiguously on a portion of the division of the limb of the quadrant

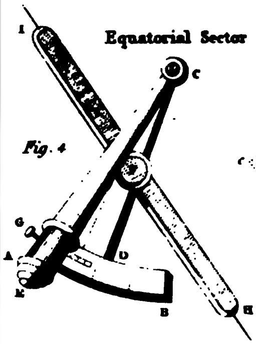
Fig. 1

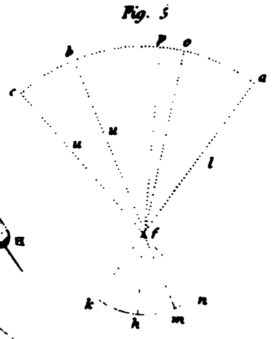


Portable Astronomical Quadrant









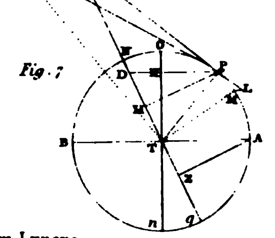
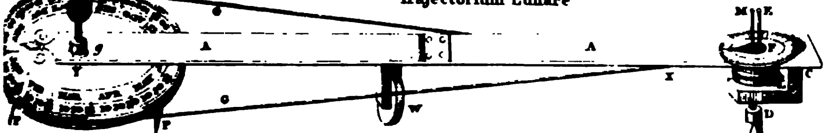
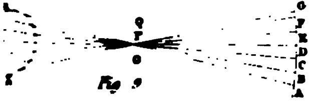
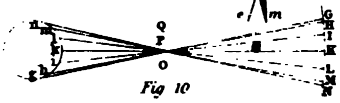


Fig. 10







London, Published by Thomas Tegg, 73, Cheapside.

J Shury, Sculp.

twenty-one divisions, and thereby di-
ir length into twenty equal parts.
first division of the vernier piece
, beginning at the point D, is a little
or to the left of the first division of the
l to 15″.

e second division of the vernier, is to
the second division of the limb double
difference, or 30″; and so on to the
and last division on the left of the ver-
; where the twenty differences being
d, each of the twentieth part of the di-
e limb, this last division will be found
actly with the twenty-first division of
f the quadrant. The index must be
twentieth part of a division, or 15″ to
o make the second division on the ver-
de with one of the divisions of the limb,
nner in moving two 20ths, or 30″, we
at the second division of the index,
will be a coincidence with a division of
Thus the beginning, D, of the vernier,
lways the line of reckoning, has advan-
ivisions, or 30″ to the right, when the
ision, marked 30 on the vernier, is seen
ond exactly with one of the lines of the

e plate of copper which carries the
is placed on the side of the quadrant,
s two verniers. The outer line CD di-
minutes into twenty parts, or 15″ each.
or line A B answers to the parts of ano-
on, not having 90°, but 96 parts of the
It is usually adopted by English astro-
a account of the facility of its subdivi-
ach of the 96 portions of the quad-
uivalent to 56′ 15″ of the usual divisions.
led on the limb into sixteen parts, and
f the vernier A B contains twenty-five
livisions; and being divided itself into
ur, immediately give parts, the value of
hich is 8″ 47½‴.

The portable astronomical quadrant is
made from twelve to twenty-three
Fig. 2, plate XIII. represents one of
strongly framed together by crossed
ular bars. The arch A C, and tele-
, are divided and constructed in a simi-
r to the mural quadrant, but generally
he division of ninety-six parts. The
ise to the telescope T is represented at
o another counterpoise to the quadrant
. The quadrant is fixed to a long axis,
s into the pillar K R. Upon this axis
index, which points to, and subdi-
vernier, the divisions of the azimuth
This azimuth circle is extremely use-
ng the azimuth of a celestial body, at
its altitude is observed. The upper
axis is firmly connected with the ad-
me G H; and the pillar is supported
ssed feet at the bottom of the pillar K
he adjusting screws *a b c d*.

hen the instrument is erected for ob-
it is necessary that two adjustments be
rately made; one, that the place or sur-
e instrument be truly perpendicular to
n; the other, that the line supposed to
from the centre to the first line of the limb, be truly on a level or parallel with the horizon. The first of these particulars is done by means of the thread and plummet *p*; the thread of which is usually of very fine silver wire, and is placed opposite to a mark made upon the end of the limb of the instrument. The four screws at the foot *a b c d*, are to be turned until a perfect coincidence is observed of the thread upon the mark, which is accurately observed by means of a small telescope T, that fits to the limb. The other adjustment is effected by means of the spirit-level L, which applies on the frame G H, and the small screws turned as before until the bubble of air in the level settles in the middle of the tube. The dotted tube E B is a kind of prover to the instrument; for, observing at what mark the centre of it appears against, or, by putting up a mark against it, it will at any time discover if the instrument has been displaced. The screw S, at the index, is the regulating or adjusting screw, to move the telescope and index, during the observation, with the utmost nicety.

Sect. VII.—The Mural Circle.

790. Valuable as have been the services which the astronomical quadrant has rendered to astronomical science, its use, in modern times, has been altogether superseded by the mural circle, of which we shall now give the description and use:—

791. The circle, with its attached telescope, is made to revolve by means of a horizontal axis, which works in collars fixed in the stone wall. The plane of the circle, see plate X. fig. 3, is parallel to the wall, but the graduations are made on the outer rim of the instrument, which rim is perpendicular to the wall.

792. These graduations are viewed and read off by six microscopes fixed to the wall, one of which microscopes is represented at A, and the places of the five others (precisely similar to the former) are marked by the letters B, C, D, E, F. The microscopes are distant from each other sixty degrees, or so placed as nearly as can be by the instrument maker.

793. The rim is divided into equal parts of five minutes each, and the readings off to a less number of minutes, and to single seconds, are effected by the micrometer microscopes, A, B, &c. the construction of which is as follows: The microscope A, or micrometer microscope A, is directed, as it is shown in the figure, to the rim on which the graduations are made. Consider the object to the microscope to be one graduation of the instrument, or the space occupied by five minutes. The image of this space will be formed in the conjugate focus of the object glass, and will be seen distinctly through the eye-glass of the microscope, when the above-mentioned image is in its focus. In this latter focus (the focus of the eye-glass) are placed a thin indented slip of metal, and a wire capable of being moved in a parallel direction from one mark of division to another by means of a screw. The revolutions of the screw, and parts of its revolution, are noted by means of a screw-head and graduated plate. Now, it is desirable, for the more convenient noting of the

results of observations, that by the five revolutions of the screw, the wire should be translated through the space occupied by five minutes; in which case one revolution would answer to one minute, and one-sixtieth to a second. The mode of effecting this may be thus explained :—

794. Suppose the object-glass of the microscope being at a certain distance from the graduated rim, and there being distinct vision, that the moveable wire appears to be translated through the five minutes by five revolutions and a half of the screw. In such case the image of the five minutes is too small. It will be increased by moving the object-glass towards the graduated rim; the eye-glass, with its wire, &c. being adjusted, by a separate movement, to distinct vision. A second trial must now be made, to ascertain whether five revolutions of the screw are equal or not to the translation of the wire over the image of five minutes of the divided limb. If there is not an equality, the adjustments must be repeated till there be an exact correspondence, as considerable trouble is thereby saved in reducing the graduations of the screw-head to minutes and seconds. If the microscope of the micrometer were allowed to remain in its first state, then, since 5·5 revolutions $= 5'$, one revolution would equal $50.454''$ &c.

795. But, whatever be the value of a revolution, the uses of the moveable wire and indented slip of brass are the same. A star is observed on the centre of the cross-wire of the telescope; and on looking through the microscope, the index, or slip of brass, occupies, probably, a place between two graduations. The wire moved from the index, either to the graduation above or below it, measures the distance of the index from that graduation by the revolutions of the screw-head. For convenience, each tooth of the indented brass answers to one minute, so that if the wire is moved from the index post, two teeth, and the index of the screw-head points to 37, then $2' 37''$ are to be added to, or subtracted from, the degrees and minutes which are read off by the eye without the aid of the micrometer. In every observation all the six microscopes are used, to diminish the errors of division, and the effects of partial expansion.

796. In reading off at the several microscopes, we need only to attend to the seconds. For, suppose a star to be in the pole, and the telescope directed to it, the whole circle must be turned round in the direction from B towards C, D, &c.; and the end of the telescope, instead of being directed, as in the figure, to a point in the south, between B and C, will be directed to a point between D and A. If (the telescope being directed to the pole) the reading off at the micrometer A were $0° 0' 0''$, the index error would be 0 If the other microscopes, F, E, B, &c. were placed exactly at equal distances, the reading off at them would be 60°, 120°, 180°, 240°, 360°. This, however, is not likely to take place, the index error of each will probably be of some magnitude. The reading off at A, for instance, instead of being $0° 0' 0''$, may be $+ 3''$, $+ 10''$, $+ 7''$; and in the same way the reading off at the other microscopes, from their not being placed at equal distances, or from inequality of graduation, partial expansion, or from all these causes conjoined, may be $60° \pm 4''$ $60° \pm 6''$ $120° + 9''$, $120° + 1''$, &c.

799. Suppose that, independently of the degrees and minutes, the seconds at the six microscopes were $+ 5''$, $+ 7''$, $+ 4''$ $+ 12''$ $+ 8''$ $+ 9''$; then these are the several index errors and if the polar distance of an observed star were read off only at one microscope, the index error belonging to that microscope must be applied to the polar distance so read off. Thus, if only the microscope B were used, whose index error is $+ 12''$, and the north polar distance of β Ursa Minores, were read off, $195° 4' 46''$, then deducting 180° for the position of the microscope, and $12''$ for the index error, we should have the north polar distance of the star $= 50°$ $4' 34''$.

800. If all the six microscopes are used, the mean index error, or one-sixth of the several index errors, is applied to the result of the several readings.

801. The same illustration would serve if we suppose the telescope directed to a star whose polar distance is previously known. If, for example, we knew that the north polar distance of Polaris was $1° 41' 41{\cdot}3''$; then if the micrometer A, marked $1° 41' 48{\cdot}5''$, we should know that its index error was $7{\cdot}2''$; and the equation to be applied to its observed north polar distance at that microscope $-7{\cdot}2$. In like manner we should know from the same star the index errors of the other microscopes, and thence the mean index error.

802. That the results from this instrument do not depend on the accurate positions of the microscopes, may be easily shown. Suppose the telescope directed to the pole, and that the seconds indicated by the micrometer A be $7''$, let B indicate $b + 23''$; C, $c + 4$; D, $d + 5$; E, $e + 9$, and F, $f + 15$; b, c, d, &c. denoting the degrees and minutes. Let X be the north polar distance of any star (Capella, for example, X being $= 44° 12' 16''$), and let the number of seconds in X be 16; so that, y being the degrees and minutes $x = y + 16''$; then the instrument being directed to Capella (and consequently turned through an angle X), and the errors of division, expansion, and uncertainties in reading off not being considered, the seconds at which it will stand will be 23, B, 39; C, 20; D, 21; E, 25, and F, 31; one-sixth of the sum of which is $26{\cdot}5''$, whence the north polar distance of Capella by the instrument, is $Y + 26{\cdot}5''$ $= 44° 12' 26{\cdot}5''$; and consequently the mean index error $y + 26{\cdot}5'' - x = y + 26{\cdot}5'' - y + 16'' = 10{\cdot}5$.

803. The index error may be found in the same way by any other star, since x may be any angle; and if the catalogues were exact, and the instrument perfect, the same index error would result from all stars. If, for instance, the seconds in x, instead of $16''$ were $36''$, we should still have the same index error $10{\cdot}5''$. But in practice, the index error will be found different with different stars, both on account of the imperfection of the catalogues, the inaccuracy of graduation, and other defects in the instrument. The index error, therefore, is found from observations on

ıber of stars, and the mean of the whole
ors so found, is considered as the ge-
n index error.

or the purpose of lessening the errors
, the telescope can be shifted to dif-
ts of the circle, so that instead of the
e A, nearly coinciding with O, when the
is pointed to the pole, it may point
10°, 20°, 30°, or any other degree of
In this case the index error in se-
nd as above, added to the degrees and
ad off by the eye, is the index error of
cope.

e mural circle, like the transit instru-
ires three adjustments, 1. Its axis must
orizontal. 2. Its line of collimation
made perpendicular to the horizontal
The line of collimation must be made to
e plane of the meridian.

e method of making the first adjust-
e same as that for making the like ad-
n the transit instrument; and as the
ments are commonly used in conjunc-
may use the transit instrument for
e plane of the circle and its telescope
ane of the meridian. When a star is
eridional wire of the transit instru-
e the mural circle, so that the star may
n its middle wire. Observe, by the
rument, when a star in or near the
ses the meridian, and if it is also at
ime on the middle vertical wire of the
of the mural circle, its line of collima-
tly adjusted. If a difference exists,
an exact agreement takes place.

e great difficulties attending the veri-
f the line of collimation in the mural
always prevent its becoming a good
trument; though, in this respect, it
than the telescope of the mural quad-
h slides along the limb of the quad-
e plane cannot be made wholly on the
e meridian.

e mural circle is evidently sufficient
ne to the extent of 180°, the differ-
e declinations of stars south and north
th of the observer. There must be two
to effect the same object; and besides
tage (that of a single instrument), the
tter balanced, and its six microscopes,
firmly fixed in a stone wall, together
ower of changing the position of the
must, when we take the mean results
number of observations, in a great
o away the errors of division or partial

e direct and special office of the mural
determine the meridional angular dis-
tars. But we may extend the prin-
uses, and view the image of the pole
flection, from a basin of quicksilver,
ence obtain the angular distance be-
star and its image, which is twice the
f the star above the horizon. Hence
distance becomes known, and the ze-
nces of other stars are consequently
en by the instrument. The circle in
ation combines in itself the properties
al quadrant and zenith sector. It was first applied by the present astronomer royal, and it is one of the many improvements on practical astronomy for which the world is indebted to that eminent, active, and unassuming astronomer.

810. The preceding is a concise description of the circle which Troughton fixed at the Royal Observatory. Some trifling differences between the results given by it and other instruments, lately induced government to have another made by Jones, which is now fixed to the west wall, five feet from the other circle. The agreement between them is almost perfect.

811. Dr. Brinkley of Dublin has a circle, and a very admirable one, which moves round a pillar, or azimuth; and consequently, in two days it determines double the zenith distance of any celestial object. He employs only three microscopes in reading off; but the principle of reading is the same as that which we have above described; and a person who attentively considers what we have said on the subject of the Greenwich circle, will have no difficulty in comprehending the method of using the Dublin one.

812. 8. The Astronomical or Equatorial Sector, is an instrument for finding the difference, in right ascension and declination, between two objects; the distance of which is too great to be observed by the micrometer, and was invented by Graham. Let A B, plate XIII. fig. 4, represent an arch of a circle containing ten or twelve degrees well divided, having a strong plate C D for its radius, fixed to the middle of the arch at D: let this radius be applied to the side of an axis H F I, and be movable about a joint fixed to it at F, so that the plane of the sector may be always parallel to the axis H I; which being parallel to the axis of the earth, the plane of the sector will always be parallel to the plane of some hour circle. Let a telescope C E be movable about the centre C, of the arch A B, from one end of it to the other, by turning a screw at G; and let the line of sight be parallel to the plane of the sector. Now, by turning the whole instrument about the axis H I, till the plane of it be successively directed, first to one of the stars and then to another, it is easy to move the sector about the joint F, into such a position, that the arch A B, when fixed, shall take in both the stars in their passage, by the plane of it, provided the difference of their declinations does not exceed the arch A B. Then, having fixed the plane of the sector a little to the westward of both the stars, move the telescope C E by the screw G; and observe by a clock the time of each transit over the cross hairs, and also the degree and minutes upon the arch A B, cut by the index at each transit; then in the difference of the arches, the difference of the declinations, and by the difference of the times, we have the difference of the right ascensions of the stars.

813. The dimensions of this instrument are these: The length of the telescope, or the radius of the sector, is 2½ feet; the breadth of the radius, near the end C, is 1⅓ inch; and at the end D, two inches. The breadth of the limb, A B, is 1½ inch; and its length six inches, containing ten degrees, divided into quarters, and

numbered from either end to the other. The telescope carries a nonius or subdividing plate, whose length, being equal to sixteen quarters of a degree, is divided into fifteen equal parts; which, in effect, divides the limb into minutes, and by estimation, into smaller parts. The length of the square axis, H I F, is eighteen inches, and of the part H I twelve inches; and its thickness is about a quarter of an inch: the diameters of the circles are each five inches: the thickness of the plates, and the other measures, may be taken at the direction of a workman.

814. This instrument may be rectified, for making observations, in this manner: By placing the intersection of the cross hairs at the same distance from the plane of the sector, as the centre of the object-glass, the plane described by the line of sight, during the circular motion of the telescope upon the limb, will be sufficiently true, or free from conical curvity; which may be examined, by suspending a long plumb-line at a convenient distance from the instrument; and, by fixing the plane of the sector in a vertical position, and then by observing, while the telescope is moved by the screw along the limb, whether the cross hairs appear to move along the plumb-line.

815. The axis, $h f o$, fig. 5, may be elevated, nearly parallel to the axis of the earth, by means of a small common quadrant; and its error may be corrected, by making the line of sight follow the circular motion of any of the circumpolar stars, while the whole instrument is moved about its axis, $h f o$, the telescope being fixed to the limb; for this purpose, let the telescope $k l$ be directed to the star a, when it passes over the highest point of its diurnal circle, and let the division cut by the nonius be then noted: then, after twelve hours, when the star comes to the lowest point of its circle, having turned the instrument half round its axis, to bring the telescope into the position $m n$; if the cross hairs cover the same star supposed at b, the elevation of the axis, $h f o$, is exactly right; but, if it be necessary to move the telescope into the position $u v$, in order to point to the star at c, the arch $m u$, which measures the angle $m f u$ or $b f c$, will be known; and then the axis $h f o$ must be depressed half the quantity of this given angle, if the star passed below b, or must be raised so much higher, if above it; and then the trial must be repeated, till the true elevation of the axis be obtained. By making the like observations upon the same star on each side the pole, in the six o'clock hour circle, the error of the axis, toward the east or west, may also be found and corrected, till the cross hairs follow the star quite round the pole: for, supposing $a o p b c$ to be an arch of the meridian (or in the secondary practice of the six o'clock hour circle), make the angle $a f p$ equal to half an angle $a f c$, and the line $f p$ will point to the pole; and the angle $o f p$, which is the error of the axis, will be equal to half the angle $b f c$, or $m f u$, found by the observation; because the difference of the two angles $a f b$, $a f c$, is double the difference of their halves $a f o$ and $a f p$. Unless the star be near the pole, allowance must be made for refractions.

816. 9. The transit instrument is used for observing objects as they pass over the meridian, and consists of a telescope fixed at right angles to an horizontal axis, so supported that what is called the line of collimation, or line of sight of the telescope, may move in the plane of the meridian.

817. Let A D, plate X. fig. 1, represent a telescope fixed, as it is represented in the figure, to an horizontal axis formed of two cones. The two small ends of these cones are ground into two perfectly equal cylinders; which cylindrical ends are called pivots. These pivots rest on two angular bearings, in form like the upper part of a Y, and denominated Y's. The Y's are placed in two dove-tailed brass grooves, fastened in two stone pillars, E and W, so erected as to be perfectly steady. One of the grooves is horizontal, the other vertical; so that, by means of screws, one end of the axis may be pushed a little forwards or backwards, and the other end may be either slightly depressed or elevated. Which two small movements are necessary, as it will be soon explained, for two adjustments of the telescope.

818. Let E be called the eastern pillar, W the western. On the eastern end of the axis is fixed (so that it revolves with the axis) an index n, the upper part of which, when the telescope revolves, nearly slides along the graduated face of a circle; attached, as it is shown in the figure, to the eastern pillar. The use of this part of the apparatus is to adjust the telescope to the zenith, or polar distance (for the one is as easily done as the other) of a star, the transit of which is to be observed. Thus, suppose the index of n to be at o, (in the upper part of the circle) when the telescope is horizontal; then, by elevating the telescope, the index of n is moved downwards. Suppose the position to be that represented in the figure, then the number of degrees between o, and what the index of n marks, is the altitude of the telescope; or we may so graduate the circle, that the index shall mark the telescope's zenith distance; or, if we make the o, the beginning of the graduation, to belong to that position of the telescope in which it is directed to the pole, the number of degrees, &c. between o and any other position of the index, will mark either the telescope's polar distance, or if we please, may be made to mark the telescope's declination; the telescope in all these cases being supposed to move in the plane of the meridian.

819. There are several other parts and contrivances belonging to the instrument not shown in the figure; for instance, one of the cones is hollowed; and, opposite the orifice, there is placed in the pillar a lamp, which, throwing its light on a plane speculum, placed in the axis of the telescope, and inclined at an angle of 45°, illuminates the cross wires. It is usual, also, in large transits, to have counterpoises, by which the pressure of the pivots of the axis on the Y's is relieved. We will now explain the three principal adjustments of the transit.

820. 1. To make the axis on which the telescope moves, horizontal.

821. 2. To make the line of collimation move in a great vertical circle; or, which is the same

thing, to make it perpendicular to the horizontal axis.

822. 3. To make it move in that vertical circle which is the meridian.

823. The first adjustment is effected by means of a level; the figure A is intended to represent the level L, as hanging by means of its upright arms (bent, however, in their upper extremities) on the two pivots of the axis. The principle, however, and mode of rendering any axis horizontal, by means of a level, may be best explained by the subjoined figure.

824. In plate X, fig. 2, the spirit-level (including in that term the brass tube that partly envelopes it, the horizontal bar to which it is affixed, and the two vertical arms by which it is hung on any cylinder or rod) is represented as hanging on a straight cylinder $a\ b$, the end towards a lying on a crotchet, which is capable of being raised or lowered by a screw B. The end A of the tube A D, which contains the level, is also capable of being lowered or raised by means of a screw at A, as is shown in the figure.

825. If $a\ b$ were horizontal, and the tube of the spirit-level were parallel to $a\ b$, then the bubble would occupy the middle, or the two extremities of the bubble would be equidistant from the centre, and would be, for instance, at f and e. The same thing would happen if the level were reversed, that is, if it were taken off the rod, turned round, and again hung on; so that d in the second position, should occupy the place that A did in the first, or should be to the right hand. But if $a\ b$, should not be horizontal, the above circumstances cannot take place. Suppose the end a to be lower than the end b, then if the level should not be parallel to $a\ b$, the bubble might still stand in the middle, by the end at A being, by a certain quantity, higher than the end at B. But on reversing the level the bubble cannot occupy its middle; since then, the lower part of the rod $a\ b$, and the lower part of the level, would both be situated at the right hand. The bubble, however, may not stand in the middle from two causes, the want of horizontality in $a\ b$, and the want of parallelism to it in the tube contained between A D.

826. If the level were parallel to $a\ b$, and the extremity of the bubble, instead of being at e, should be at h, on reversing the level, the other extremity of the bubble (which, by the reversion, would be towards a) would be at h; $f\ k$ being equal to $e\ h$. But suppose this is found not to be the case, and that the extremity of the bubble, on reversing the level, is at n, then the circumstance of the bubble not standing at the two points e and f, cannot arise solely from the end a being higher than b; but the level cannot be parallel to $a\ b$; and in the case we have put, the end at A must be lower than the end at D, when the level then is in the second or the reversed position; so elevate the end at A, by means of the screw A, that the extremity of the bubble shall descend from n, and occupy a place intermediate to n and k, and then the level is made parallel to $a\ b$: this is the first adjustment. Next, by means of the screw B, so depress the end, a that the extremities of the bubble shall be (as they ought to be, $e\ f$ being the length of the bubble) at e and f; then is $a\ b$ adjusted or made horizontal; this second adjustment completes the operation.

827. In the preceding reasonings, $a\ b$ has been considered (the whole of it) as cylindrical. But this is not necessary: it is sufficient if its extremities at a and b (the pivots), on which the level is hung, be equal cylinders, the axis of which lie in the same straight line. The intermediate parts of the axis of the transit between the pivots, may be of any form: they may be formed, as they generally are, of two cones. The preceding process then will render the axis of the transit horizontal; the level, whether in its primary or in its reversed position, being supposed to be hung on the equally cylindrical pivots.

828. The axis being now horizontal, the next operation is to make the line of collimation describe a great vertical circle, or, which is now the same thing, to make the line of collimation perpendicular to the axis of the transit. The telescope A D is furnished, like the telescope of the quadrant, with a system of cross-wires placed in the principal focus of the object-glass. Suppose the wires so placed, that the line of collimation is perpendicular to the axis of the transit. If then a small and well-defined object be bisected by the centre of the cross-wires, it will still be bisected when the transit is lifted off its angular bearings, reversed and directed to the object; that is, if the end of the axis carrying the index n, which is placed on the eastern Y, should be placed on the western. Let now the wires be deranged, so that their intersection is moved, not, as in the former case, in the plane of the meridian, but in a direction perpendicular to that plane, and suppose it moved a little towards the east. In this case, the object before bisected is no longer so, but will be seen in the field of view a little to the west of the present centre of the cross-wires. Reverse the telescope, then the centre will be towards the west, and the original object will be seen a little to the east of the centre: as much towards the east as it was before towards the west. If, therefore, there should be two objects or marks (on the horizon, for instance,) bisected by the centre of the wires in the two positions of the transit, the correction or adjustment of the line of collimation would consist in moving the centre of the cross-wires half-way towards that object which is not on the centre.

829. But the moving the centre of the cross-wires half-way towards an object, is a matter of guess, and not of certainty. In order to ascertain whether, in moving the centre, we have adjusted it rightly, we may avail ourselves of that angular bearing, or Y, which, by means of an horizontal groove and screw, we can move, together with the pivot of the axis, in azimuth. So move these then, that the object to which we have already made the centre to approach half-way, may be exactly bisected by that centre. Reverse the transit, and the object and centre are either coincident, or very nearly so. If the latter be the case, again by their proper motion, move the centre of the wires half-way towards the object, and move it the other half-way by the screw that acts on the axis. Reverse the instru

ment, and again, if it be necessary, repeat the above operations.

830. By these means, after a few trials, we are sure of making the line of collimation, or axis of vision, perpendicular to the axis of the transit; and when that is effected, the cross-wires are no longer to be meddled with, although we must continue to use the above horizontal movement of the axis, for the purpose of placing the line of collimation in the plane of the meridian. That line now moves in a vertical circle, and produced passes through the zenith: it is farther necessary to make it pass through the pole.

831. The transit instrument is supported between two fixed pillars. It must be supposed to be nearly in the meridian, and to need only some slight adjustments to place it there exactly. It would be easy to effect this, were the pole-star exactly in the pole; for, then, it would be only requisite to bisect that star by the middle vertical cross-wire. But the pole-star being, in fact, a circumpolar one, we must compute, by means of existing tables and observations, the time of its transit; and, at that computed time, bisect the star by the middle vertical wire. By these methods we may place the transit very nearly in the plane of the meridian.

832. We will now show how to place it there more exactly by means either of the polar, or of any other circumpolar star.

833. The axis being horizontal, the optical axis perpendicular to it passes through the zenith: let Z P H in fig. 1, plate VI., be the true meridian, and $Z s m$ the vertical circle described by the optical axis or line of collimation; then H m, which is the measure of the angle at Z, is the deviation of the transit from the meridian.

Let $s\ s'\ s''\ \sigma$ represent the circle described by a circumpolar star, which is seen through the transit telescope at σ, its inferior passage, and at s, its superior. Now, when the transit is not in the meridian, the time from σ to s cannot equal the time from s through s' and s'' to σ: for, P being the pole, the former time is proportional to the angle $\sigma \mathrm{P} s$, or,

$$180^\circ - \angle\, s\mathrm{P}s' - \angle\, \sigma \mathrm{P} s''.$$

the latter to

$$180^\circ + \angle\, s\mathrm{P}s' + \angle\, \sigma \mathrm{P} s''.$$

834. Hence, if the interval between the inferior and superior passage should be less than the interval between the superior and inferior, the plane in which the transit moves from the zenith to the north of the horizon (P being the north pole) is to the eastward of the true meridian.

835. But in order to estimate the quantity of deviation from the observed difference of intervals between the passages, we must compute the angles $s\mathrm{P}s'$ or $s\mathrm{P}\mathrm{Z}$, and $\sigma \mathrm{P}\mathrm{H}$,—now

$$\sin.\, s\mathrm{PZ} = \sin.\, s\mathrm{ZP} \times \frac{\sin.\, \mathrm{Z}s}{\sin.\, \mathrm{P}s'}$$

$$\sin.\, \sigma \mathrm{PH} = \sin.\, \sigma \mathrm{PZ} = \sin.\, s\mathrm{ZP} + \frac{\sin.\, \mathrm{Z}\sigma}{\sin.\, \mathrm{P}\sigma}$$

Let $\angle\, s\mathrm{ZP}$ (measured by H m) $= \mathrm{Z}$,

$$\mathrm{P}s = \mathrm{P}\sigma = \pi$$

the latitude of the place $(= \mathrm{HP}) = \mathrm{L}$.

Then since Z, or the deviation from the meridian is, by the conditions, very small, we have, nearly $\sin.\, \mathrm{Z} = \mathrm{Z}$

$$\mathrm{Z}s = \mathrm{ZP} - \mathrm{P}s = 90^\circ - (\mathrm{L} + \pi),$$

$$\mathrm{Z}\sigma = \mathrm{ZP} + \mathrm{P}s = 90^\circ - (\mathrm{L} - \pi),$$

consequently, $s\mathrm{PZ}$ (which is, nearly, = its sine)

$$= \mathrm{Z}.\, \cos. \frac{(\mathrm{L} + \pi)}{\sin.\, \pi} = \mathrm{Z}.\, (\cos.\, \mathrm{L} \cos.\, \pi - \sin.\, \mathrm{L}),$$

and $\sigma \mathrm{PH} = \mathrm{Z}.\, \dfrac{\cos.\, (\mathrm{L}. - \pi)}{\sin.\, \pi} - \mathrm{Z}\ (\cos.\, \mathrm{L}$ $\cos.\, \pi + \sin.\, \mathrm{L})$.

Hence, the time from σ to $s = 180^\circ - 2\, \mathrm{Z} \cos$ L. cot. π,

and from s to $\sigma = 180^\circ + 2\, \mathrm{Z} \cos.\, \mathrm{L}.\, \cot.\, \pi$;

let the former time $= 12\,\mathrm{h}. - \Delta$,

the latter $= 12\,\mathrm{h}. + \Delta$;

then, since 180° is the angular measure, or exponent of twelve hours of siderial time,

$$12\,\mathrm{h}. - \Delta = 12\,\mathrm{h}. - 2\,\mathrm{Z}.\, \cos.\, \mathrm{L}.\, \cot.\, \pi,$$

$$12\,\mathrm{h}. + \Delta = 12\,\mathrm{h}. + 2\,\mathrm{Z}.\, \cos.\, \mathrm{L}.\, \cot.\, \pi,$$

$$\text{whence}\quad \mathrm{Z} = \frac{\Delta}{2 \cos.\, \mathrm{L}.\, \cot.\, \pi.}$$

$$\text{or}\quad = \frac{\Delta}{2\cdot} \sec.\, \mathrm{L} \tan.\, \pi.$$

836. The plane in which the line of collimation moves is brought into the plane of the meridian by means of a screw; and supposing the adjustment nearly effected, it may be completed in the following manner: Let the time of the transit of an equatorial star be noted on a particular day. Alter the inclination of the plane in which the line of collimation moves, by turning the screws once round, and observe the time of the star's next transit. If the difference between the siderial times of transit be s seconds, then, s seconds of time corresponding to one revolution of the screw, it is easy to find the number of revolutions, or parts of a revolution, that will give the correction 2, in the above equation; whence the adjustment may be made to any degree of accuracy.

837. Computing from the above formulæ for Z, we shall find that, in the case of Polaris, a deviation of ten seconds in the position of the transit instrument will, in the latitude of London, produce a difference of about seven minutes in the times between the upper and lower transits of the star; and in the case of Capella, a difference of only about twenty-five seconds. Hence, cæteris paribus, the pole-star is better adapted than Capella, to adjust, by the preceding method, a transit telescope to the plane of the meridian. The slow motion of the pole-star, however, in some measure detracts from this superiority. In small instruments it is hid for some seconds behind the wire. Even in the splendid ten feet transit, at Greenwich, it may be considered as hid for about a second.

838. Still, however, on the whole, this star is the most convenient one that can be made use of. The following is the method of making this adjustment by means of the transits of the pole-star and of a star which passes near the zenith of the place of observation. In our latitudes, for instance, if the transit deviate only slightly from the plane of the meridian, Capella would
the meridian very nearly at the time of its
ing the vertical wire of the telescope. Assu
to pass exactly, and note the difference bet
the time shown by the clock and the star's k
right ascension. Observe the time when

is on the meridian, (which will differ m the star's right ascension than the Capella did from its right ascension), pute, from the difference between its t ascension and the observed time of its he deviation of the instrument, and accordingly.

his operation will give a near approxi- the required position; and by a repe- two of the process, the adjustment may d with great precision.

he line of collimation being now sup- means of the previous adjustments, to a great circle passing through the ce- le and the zenith of the observer, the strument is in a fit state to note the pas- tars across the meridian. A star passes ian when it coincides with the centre *a*, e IX., of the cross-wires; but if *d e* were ical, a star on any point of *d e* would e meridian; hence it is desirable to vertical, since we might then observe transit on any part of that line. This sily done thus: Direct the transit tele- ome well-defined distant object, so that ed by some point of *d e*; move the te- wards and downwards on its hori- s, and observe whether the same ob- ected by every part of *d e*, or whether g *d e*. If it does, the wire is vertical, iddle wire is a meridional wire; if it the wire must be adjusted till the object with it in every part.

n large instruments these various ad- are made with considerable trouble ulty; and in order to prevent a repeti- ese troublesome verifications, when the t is once adjusted to the plane of the two marks are set up, one to the north ther to the south, and their places de- by means of the meridional wire. They laced by means of the instrument, ad- the astronomical means above ex- and they are subsequently used to bring ment into the meridian, should it be- nged.

esides the meridional wire, it is usual on each side of it, and at equal dis- m it, parallel side wires, to check the ire and to supply its place, if from other accidents, an observation on it t be obtained. The old transit, at h, had four side wires, or, in all, five he present one has seven; though only n general used. In fig. 2, plate IX. are represented, and numbered 1, 2,

f the wires are equidistant, then the fifth sum of the times at which a star is ob- the several wires, will be the time of the meridian, and it ought, if the ob- s well made, to agree with the time of e middle wire.

t the fact is, we are not able to note the times at the several wires; for o beat of the pendulum will happen en the star is on the wire. The ob- bliged to estimate to the best of his the fraction of a second sum, the last beat of the pendulum, when the star is on the wire. A tenth or two of a second may be put down too much at one wire, and too little at another; but the errors will probably in a great degree compensate each other, and the result will certainly be entitled to more confidence than a single observation at the middle wire.

845. It will soon be perceived by the observer, that stars near the equator, pass more speedily from wire to wire than stars near the pole. It is easy to prove that the time of a star's describing small spaces perpendicular to the meridian varies as the secant of its declination. For (fig. 1, plate IX.) let P represent the pole P *e*, P *f*, two quadrants; let *s t* represent the interval of the wires, which, by reason of its smallness is nearly coincident with *s r t*. Take $e\,q = s\,t$; then by the revolution of the earth or star apparently moves from *s* to *t* in the same time that another moves from *e* to *f*. But the time through *s t* (= the time through *e f*) = time through $e\,q \times \frac{e\,f}{e\,q}$ = time through $e\,q + \frac{e\,f}{s\,t}$ = time through $e\,q + \frac{\text{rad.}}{\text{cos.}\,se}$ = time through $e\,q + \frac{\text{sect.}\,s\,e}{\text{rad.}}$ Hence, if the time through *e q*, that is the time of an equatorial star crossing the interval *e q*, be given, the time of crossing an equal interval, *s t*, varies as the secant of the star's declination.

846. There is, however, no star exactly in the equator; but the equatorial time of a star's running from wire to wire, may be readily obtained from the time which a star of known declination is observed to take. Let *t* be the observed time, and *d* the declination, then *t*, sect. *d* = the equatorial time.

847. By the preceding methods, the upright wires of the telescope may be adjusted vertically, and the true intervals between the wires found in parts of siderial time. To know whether the wires, which ought to be at right angles to the former, are truly horizontal, direct the telescope towards a star near the equator, and if the star entering at *h*, plate IX. fig. 2, in an inverting telescope, run along *h f*; then *h f* is horizontal.

848. This test of horizontality is strictly true only with respect to a star in the equator. If the star be out of the equator, it cannot be bisected during the whole of its passage from *h* to *f*; for the star then describes the arc of a small circle. In fig 1, plate IX. let *s m t* be an arc of a great circle; then a star describing *s m t* would seem to an eye situated in a plane passing through *s m t* and *s t*, to describe *s t*; but *s r t*, part of a small circle parallel to *e f*, is the star's apparent path, which coinciding at its extremities with the chord *s t* would appear, in the astronomical telescope, to describe a curve below the cross horizontal wire, the apparent curvature of the path increasing with the declination. There are, however, many stars near enough the equator to make this adjustment, without reference to the apparent curvature of their paths in the transit instrument, as they will differ from straight lines by a quantity too small to be estimated.

849. We have hitherto spoken only of the transits of stars, which are but as points without disks. The sun and the moon, however, have

disks, but no marked points for their centres; and the transit of a heavenly body means the transit of its centre. With respect to the sun, the time at which his first or preceding limb touches each wire is noted, and the time at which his following limb comes to the same wire is also noted, and the sum of the times of observation divided by the number of observations, gives the time at which his centre is on the meridian.

850. It is seldom, however, that the transit of both limbs of the moon can be observed; but the mean of the times at which her enlightened limb is in contact with the several vertical wires, is the time at which that limb is on the meridian; and adding to this, or subtracting from it, the time that the moon takes to move over a space equal to her own semidiameter, according as the east or west, the following or preceding limb is observed, we obtain the time at which her centre is on the meridian.

We have judged it right to devote so much space to the description of the circle and transit instruments, as in the present state of astronomical science, they, with the astronomi clock, are the capital instruments of our obs vatory.

851. 10. The Equatorial or Portable Obser tory; an instrument designed to answer a nu ber of useful purposes in practical astronom independent of any particular observatory, m be made use of in any steady place, and p forms most of the useful operations in the scien The principal parts of this instrument, pl XIII. fig. 3, are, 1. The azimuth or horizont circle A, which represents the horizon of th place, and moves on a long axis B, called th vertical axis. 2. The equatorial or hour circ C, representing the equator, placed at righ angles to the polar axis D, or the axis of th earth upon which it moves. 3. The semicirc of declination E, on which the telescope is placed and moving on the axis of declination, or th axis of motion of the line of collimation.

852. These circles are measured and divide as in the following table:

Measures of the several circles, and divisions of them.	Radius. In dec.	Limb divided to	Nonius of 30 given seconds.	Divided on limb into parts of inc.	Divided by Nonius into parts of inc.
Azimuth or horizontal circle.	5 1	15′	30″	45th	1350th
Equatorial or hour circle.	5 1	15′ 1′ in time.	30′ 2″	45th	1350th
Vertical semicircle for declination or latitude.	5 5	15′	30″	42nd	1260th

853. 4. The telescope in this equatorial may be brought parallel to the polar axis, as in the figure, so as to point to the pole star in any part of its diurnal revolution: and thus it has been observed near noon, when the sun has shone very bright. 5. The apparatus for correcting the error in altitude occasioned by refraction, which is applied to the eye-end of the telescope, and consists of a slide G, moving in a groove or dovetail, and carrying the several eye-tubes of the telescope, on which slide there is an index corresponding to five small divisions engraved on the dovetail; a very small circle, called the refraction circle, H, moveable by a finger screw at the extremity of the eye end of the telescope; which circle is divided into half minutes, one entire revolution of it being equal to 3′ 18″, and by its motion raises the centre of the cross hairs on a circle of altitude; and a quadrant, I, of 1½ inch radius, with divisions on each side, one expressing the degree of altitude of the object viewed, and the other expressing the minutes and seconds of error occasioned by refraction corresponding to that degree of altitude. To this quadrant is joined a small round level, K, which is adjusted partly by the pinion that turns the whole of this apparatus, and partly by the index of the quadrant; for which purpose the refraction circle is set to the same minute, &c. which the index points to, on the limb of the quadrant; and if the minute, &c. given by the quadrant exceed the 3′ 18″, contained in one entire revolutions; then the centre of the cross ha will appear to be raised on a circle of altitude the additional height which the error of refracti will occasion at that altitude.

854. To adjust this instrument make the li of collimation to describe a portion of an hou circle in the heavens; in order to which, the a muth circle must be truly level, the line of coll mation, or some corresponding line represent by the small brass rod, M, parallel to it, must perpendicular to the axis of its own proper m tion; and this last axis must be perpendicular the polar axis; on the brass rod M, there is o casionally placed a hanging level, N, the use which will appear in the following adjustments

855. The azimuth circle may be made lev by turning the instrument till one of the levels parallel to an imaginary line joining two of th feet screws; then adjust the level with these tw feet screws; turn the circle half round, i. e. 180 and, if the bubble be not then right, correct ha the error by the screw belonging to the level, an the other half error by the two feet screws; repe this till the bubble comes right; then turn th circle 90° from the two former positions, and the bubble right, if it be wrong, by the fi screw at the end of the level; when this is don adjust the other level by its own screw, an the azimuth circle wil be truly level. T hanging level must then be fixed to the bra rod by two hooks of equal length, and made tru parallel to it: for this purpose make the polar a perpendicular or nearly perpendicular to the h

nation; then adjust the level by the pinion of the declination semicircle; reverse the level and, if it be wrong, correct half the error by a small steel screw that lies under one end of the level, and the other half error by the pinion of the declination semicircle; repeat this till the bubble be right in both positions.

856. To make the brass rod on which the level is suspended at right angles to the axis of motion of the telescope or line of collimation, make the polar axis horizontal, or nearly so: set the declination semicircle at 0°, turn the hour circle till the bubble comes right; then turn the declination circle to 90°; adjust the bubble by raising or depressing the polar axis; first by hand till it be nearly right; afterwards tighten, with an ivory key, the socket which runs on an arch with the polar axis; and then apply the same ivory key to the adjusting screw at the end of the said arch, till the bubble comes quite right; then turn the declination circle to the opposite 90°; if the level be not then right, correct half the error, by the aforesaid adjusting screw at the end of the arch, and the other half error by the two screws which raise or depress the end of the brass rod. The polar axis remaining nearly horizontal as before, and the declination semicircle at 0°, adjust the bubble by the hour circle; then turn the declination semicircle to 90°, and adjust the bubble by raising or depressing the polar axis; then turn the hour circle twelve hours; and if the bubble be wrong, correct half the error by the polar axis, and the other half error by the two pair of capstan screws at the feet of the two supporters on one side of the axis of motion of the telescope; and thus this axis will be at right angles to the polar axis.

857. The next adjustment is to make the centre of cross hairs remain on the same object, while the eye-tube is turned quite round by the pinion of the refraction apparatus. For this adjustment, set the index on the slide to the first division on the dovetail; and set the division marked 18" on the refraction circle to its index; then look through the telescope, and with the pinion turn the eye-tube quite round; and if the centre of the hairs does not remain on the same spot during that revolution, it must be corrected by the four small screws, two and two at a time, which will be found upon unscrewing the nearest end of the eye-tube that contains the first eye-glass; repeat this correction till the centre of the hairs remains on the spot looked at, during an entire revolution.

858. To make the line of collimation parallel to the brass rod on which the level hangs, set the polar axis horizontal, and the declination circle to 90°; adjust the level by the polar axis; look through the telescope on some distant horizontal object, covered by the centre of the cross hairs; then invert the telescope, which is done by turning the hour circle half round, and, if the centre of the cross hairs does not cover the same object as before, correct half the error by the uppermost and lowermost of the four small screws at the eye-end of the large tube of the telescope. This correction will give a second object, now covered by the centre of the hairs, which must be adopted instead of the first object: then invert the telescope as before; and if the second object be not covered by the centre of the hairs, correct half the error by the same two screws which were used before. This correction will give a third object, now covered by the centre of the hairs, which must be adopted instead of the second object; repeat this operation till no error remains; then set the hour circle exactly to 12 hours (the declination circle remaining at 90° as before); and, if the centre of the cross hairs does not cover the last object fixed on, set it to that object by the two remaining small screws at the end of the large tube, and then the line of collimation will be parallel to the brass rod.

859. For rectifying the nonius of the declination and equatorial circles, lower the telescope as many degrees, minutes, and seconds, below 0°, or Æ, on the declination semicircle as are equal to the complement of the latitude; then elevate the polar axis till the bubble be horizontal, and thus the equatorial circle will be elevated to the co-latitude of the place; set this circle to 6 hours; adjust the level by the pinion of the declination circle; then turn the equatorial circle exactly 12 hours from the last position; and if the level be not right, correct one half of the error by the equatorial circle, and the other half by the declination circle; then turn the equatorial circle back again exactly 12 hours from the last position; and if the level be still wrong, repeat the correction as before till it be right, when turned to either position; that being done, set the nonius of the equatorial circle exactly to 6 hours, and the nonius of the declination circle exactly to 0°. The uses of this equatorial are:

860. 1. To find the meridian by one observation only: for this purpose, elevate the equatorial circle to the co-latitude of the place, and set the declination semicircle to the sun's declination for the day and hour required; then move the azimuth and hour circles both at the same time, either in the same or contrary direction, till the centre of the cross hairs in the telescope exactly covers the centre of the sun. When that is done, the index of the hour circle will give the apparent or solar time at the instant of observation; and thus the time is gained, though the sun be at a distance from the meridian. Then turn the hour circle till the index points precisely at 12 o'clock, and lower the telescope to the horizon, in order to observe some point there in the centre of the glass, and that point is the meridian mark found by one observation only; the best time for this operation is three hours before or three hours after twelve at noon.

861. 2. To point the telescope on a star, though not on the meridian, in full day light. Having elevated the equatorial circle to the co-latitude of the place, and set the declination semicircle to the star's declination, move the index of the hour circle till it point to the precise time at which the star is then distant from the meridian, found in tables of the right ascension of the stars, and the star will then appear in the glass. Besides these uses, peculiar to this instrument, it is also applicable to all the purposes to which the principal astronomical instruments, viz. a transit, a quadrant, and an equal altitud instrument, are applied.

862. This instrument, however, like all instruments that profess to do much, does nothing so well as instruments whose objects are more limited. The splendid equatorial of sir Geo. Shuckburgh, now at the royal observatory at Greenwich, is seldom used, except to observe comets when they cannot be seen at the time of their transit. And even for that purpose it is now likely to be superseded, by an equatorial lately put up in the north-west turret of the observatory, by Mr. Dollond. The polar axis of this equatorial is fixed in the direction of the earth's axis, and carries round with it a vernier which points out right ascensions, on an equatorial circle, fixed at its lower extremity; and a circle at right angles to the equatorial is attached to the axis, which shows at once the distances of objects to which its telescope is pointed.

863. We shall conclude the subject of astronomy with the following catalogue of sixty of the principal fixed stars, recently published by astronomer royal, who remarks upon it that 'The catalogue will require a small correction, common to every star, both in right ascension, and north polar distance. The correction in R. A. will be subtractive, and may amount to nearl one-tenth of a second in time. The correctio in N P D will, I imagine, be likewise subtractive and will not exceed a quarter of a second.

'It is divided into four classes, according t the supposed degree of accuracy of each. Th stars of the first class are those that have bee determined both by direct vision, and reflection The second class consists chiefly of those to near the zenith to be observed by reflection The third class is not quite so exact as the second and the fourth still less exact than the third. Th errors of the first and second classes, I shoul think, can rarely exceed a quarter of a second in the third class the error may probably amou to double that quantity; and the fourth cla cannot be relied on but to the nearest secon Regulus ought, from the number of observatio to be in the first class; but, from some acciden discordances, I have reserved it for future e amination. The errors are quite independent the common error above-mentioned, the ex amount of which will be the future subject investigation.'

864. *Catalogue of the Right Ascensions and North Polar Distance of Sixty Stars, for the beginning of* 1823, *by* J. Pond, *Esq. Astronomer Royal.*

No.	Names of Stars.	Right Ascension.			N. P. D. Bradley's Refraction.			N. P. D. French Refraction.			Class.
		H.	M.	S.							
1	γ Pegasi . .	0	4	8·1	75°	48′	2·2″	75°	48′	3·4″	1
2	α Cassiopeæ . .	0	30	31·3	34	26	6·0	34	26	6·4	1
3	Polaris . . .	0	57	46·2	1	38	7·7	1	38	7·7	1
4	α Arietes . .	1	57	13·1	67	22	44·4	67	22	45·1	1
5	α Ceti . . .	2	53	2·3	86	36	36·5	86	36	38·1	3
6	α Persei . . .	3	11	44·3	40	46	39·1	40	46	39·7	2
7	Aldebaran . .	4	25	46·6	73	51	17·7	73	51	18·6	1
8	Capella . .	5	3	37·8	44	11	36·9	44	11	37·5	1
9	Rigel . . .	5	6	2·2	98	24	48·5	98	24	50·3	3
10	β Tauri . .	5	15	6·8	61	33	6·5	61	33	7·4	1
11		5	15	38·7	83	49	8·0	83	49	9·5	3
12		5	22	58·3	90	26	18·0	90	26	19·7	4
13		5	27	14·3	91	19	22·9	91	19	24·6	4
14		5	31	50·1	92	2	38·0	92	2	39·7	4
15		5	45	35·6	82	38	4·1	82	38	5·3	1
16		5	46	32·9	45	4	55·9	45	4	56·7	3
17		6	37	20·9	106	28	48·5	106	28	50·5	3
18		7	23	17·6	57	43	59·1	57	44	59·9	1
19		7	30	2·2	84	19	43·3	84	19	44·8	1
20		7	34	28·5	61	33	16·8	61	33	17·6	1
21		9	18	53·5	97	53	44·4	97	53	46·2	3
22		9	58	56·3	77	10	15·6	77	10	17·0	–
23		10	52	43·5	27	17	43·7	27	17	44·1	1
24		11	40	1·7	74	26	18·1	74	26	19·3	3
25		11	44	28·6	35	19	14·9	35	19	15·6	2
26		12	6	37·2	31	59	0.3	31	59	0·9	3
27		13	15	52·9	100	14	0·4	100	14	2·2	3
28		13	16	46·8	34	8	51·2	34	8	51·9	2
29		13	40	33·5	39	47	59·6	39	48	0·4	2
30		13	59	35·9	24	46	31·4	24	46	31·9	3
31	Arcturus	14	7	35·6	69	53	29·2	69	53	30·1	1
32		14	37	15·6	62	10	27·8	62	10	28·9	3
33		14	40	54·6	105	15	14·5	105	15	16·5	4
34		14	41	6·4	105	17	56·0	105	17	58·0	4
35		14	51	19·5	15	7	15·6	15	7	15·9	1

Astronomer Royal's Catalogue continued.

No.	Names of Stars.	Right Ascension.			N. P. D. Bradley's Refraction.			N. P. D. French Refraction.			Class.
		H.	M.	S.							
36		15	27	12·0	62	41	0·8	62	41	1·6	1
37		15	35	33·5	83	00	36·8	83	00	38·1	1
38		16	5	5·0	93	13	49·0	93	13	50·8	3
39		16	18	34·2	116	1	43·3	116	1	45·5	4
40		17	6	35·0	75	24	0·4	75	24	1·5	1
41		17	26	25·9	37	33	48·8	37	33	49·5	2
42		17	26	43·5	77	18	11·0	77	18	12·2	1
43		17	52	30·1	38	29	10·6	38	29	11·3	2
44		18	29	22·3	3	25	11·1	3	25	11·2	3
45		18	30	57·0	55	22	31·2	51	22	31·9	1
46		18	43	33·0	56	50	12·0	56	50	13·0	1
47		18	57	16·8	76	23	31·3	76	23	32·6	2
48		19	12	29·7	22	38	58·9	22	38	59·5	2
49		19	16	34·6	87	13	47·3	87	13	48·9	2
50		19	37	50·8	79	48	39·0	79	48	40·2	2
51		19	42	8·9	81	35	29·7	81	35	30·9	1
52		19	46	37·3	84	1	40·2	84	1	41·4	2
53		20	7	49·9	103	2	49·6	103	2	51·5	4
54		20	8	13·7	103	5	6·6	103	5	8·5	4
55		20	35	24·2	45	20	52·4	45	20	53·1	1
56		20	58	58·6	52	6	55·2	52	6	56·1	3
57		21	14	21·0	28	9	43·0	28	9	43·6	1
58		21	22	14·2	96	20	38.5	96	20	40·3	2
59		21	26	20·4	20	12	53·9	20	12	54·3	1
60		21	56	41·5	91	10	31·3	91	10	33·0	1
61		22	55	57·2	75	44	41·7	75	44	42·9	1
62		23	59	15·6	61	53	12·5	61	53	13·2	1

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ASTROPECTEN, in natural history, a species of star fish, composed of a central nucleus, furrowed like the shell of the common scallop, and parting into five principal rays, from each of which issue several transverse processes, covered with a hairy down.

ASTROPODIA, the star-stone. See ASTERIA.

ASTROSCOPE, an astronomical instrument, composed of two cones, on whose surface the constellations, with their stars, are delineated, by means whereof the stars may easily be known.

ASTROSCOPIA, the art of examining the stars by telescopes. Huygens improved this art considerably. See his Astroscopia Compendiaria.

ASTROTHEMATA, in astrology, the positions of the stars in a theme of the heavens.

ASTRUC (John), a celebrated French physician, was born in 1684, at the little town of Sauves in Languedoc. He studied at the university of Montpelier, and in 1717 was in great repute there as a teacher of medicine. His fame became so considerable that the king assigned him an annual salary, and appointed him to superintend the mineral waters in Languedoc. As Montpelier, however, did not afford sufficient scope for his genius, he removed to Paris, but soon after left it, having in 1729 accepted the office of first physician to the king of Poland. Upon the death of the celebrated Geoffroy, in 1731, he was appointed Regius Professor of medicine at Paris. Of his numerous writings the following are the principal: 1. De Morbis Venereis. 2. Memoirs relative to the Natural History of Languedoc. 3. A Treatise on Pathology. 4. On Therapeutics. 5. On the Inoculation for the Small-pox. 6. On Tumors and Ulcers. 7. Origine de la Peste. 8. De motu Musculari. 9. L'Art de l'Accoucheur. 10. De motus Fermentativi. 11. Memoire sur la Digestion. 12. On the diseases of Women. The first and last have been translated into English. He died universally regretted, on the 15th of May 1766, in the eighty-second year of his age.

ASTRUM, or ASTRON a constellation, or assemblage of stars; as distinguished from aster, a single star.

ASTRUT'. On strut. See STRUT.

> What good can the great gloton do w• his bely standing *a strote* like a taber, and his noll toty with drink. *Sir Thos. More*, fol. 98.

> Inflated and *astrut* with self conceit,
> He gulps the windy diet; and ere long,
> Adopting their mistake, profoundly thinks
> The world was made in vain, if not for him.
> *Cowper*. *The Task*, book v.

ASTURA, in ancient geography, a town of Italy, in the Campagna di Roma, which had a good harbour. Cicero lost his life in it, and prince Conradin, last heir of the house of Hohenstaufen, was taken prisoner here in 1268.

ASTURIA, an ancient kingdom of Spain, subdued by Augustus emperor of Rome.

ASTURIANS, the brave inhabitants of Asturia, who, along with those of Cantabria, asserted their liberty long after the rest of Spain had submitted to the Roman yoke. So great was their desire of liberty, that, after being closely shut up by the Roman army, they endured the most terrible calamities of famine, even to the devouring of one another, rather than submit to the enemy. At length, however, the Asturians proposed to surrender; but the Cantabrians opposed the measure, and maintained that they ought rather to die sword in hand. Upon this the two nations quarrelled, notwithstanding their desperate situation; and a battle ensuing, 10,000 of the Asturians were driven to the entrenchments of the Romans, whom they begged, in the most moving manner, to receive them on any terms. But Tiberius refusing to admit them into the camp, some of these unhappy people put an end to their lives by falling on their own swords; others, lighting great fires, threw themselves into them, while some poisoned themselves by drinking the juice of a venemous herb. The campaign being closed by the winter, the next year the Asturians summoned all their strength against the Roman but, after frequent efforts, sometimes in conjunction with the Cantabrians, they were reduced the imperial armies, and submitted to the Rom power till the subversion of that empire by t Goths.

ASTURIA, or Asturias, anciently the kingdom of Asturia, is now a principality of modern Spain. It is bounded by Biscay on the east, Galicia on the west, Castile and Old Leon on the south, and the sea on the north. Its greatest length is about 120 miles, and its breadth 54. On the south it is separated from Castile and Old Leon by high mountains covered with woods. The province is tolerably fertile, but is thinly inhabited. It has mines of gold, lapis lazuli, and vermilion. The hereditary prince of Spain is styled Prince of the Asturias; the infant Don Henriquez, son of John I. of Castile, being the first who took that title in 1388. This principality is commonly divided into Asturia d'Oviedo, and Asturia de Santillana, so called from their principal towns; the former occupying two-thirds of the principality to the west, and being about thirty Spanish leagues in length, and eighteen in breadth; the latter the other third, sixteen leagues long and twelve broad. The climate of the whole principality is colder than the rest of Spain; but the mountains and hills, though often covered with snow during the whole winter, abound with excellent pastures, and a great variety of fruit trees. Apples are particularly abundant, and a great deal of cyder is made and exported; Spanish America alone has received 28,000 arobas of 25 lb. each yearly. But the most important branch of their agriculture is the breeding of cattle; and their horses have been celebrated for strength from the days of Martial and Silius Italicus. The Asturias contain a bishopric, 668 parishes, 36 religious houses, including 23 monasteries and nunneries, a university, 3 colleges, a royal court of justice, 4 cities, 50 towns, and 2 sea-ports, the principal of which is Gijon, together with several villages; and a population of about 350,000. In more modern history, they are celebrated for having received Pelayo and the other Christians who escaped from the Moors after the battle of Xeres de la Frontera, and who, protected by this mountainous country, bade defiance to, and finally expelled the invaders, laying in these provinces the foundation of the Spanish monarchy. Hence the Asturian nobility and gentry are possessed of some extraordinary privileges, and the inhabitants of the mountain Ancona are still distinguished by the title of 'the illustrious mountaineers.'

Asturias, in zoology, a name by which some authors have called the goshawk.

ASTUTE. Lat. *astutus*; from Gr. *αϛυ*, a city. Acute, penetrating, sharp. Applied to the inhabitants of a city who are supposed to be sharp-witted in consequence of having much intercourse with the chicane and craft of mankind, and are therefore prepared to contend with it.

We term those most *astute* which are most versute.
Sir M. Sandy's Ess. p. 168.

ASTYAGES, son of Cyaxares, the last king of the Medes. He dreamed, that from the womb of his daughter Mandane, married to Cambyses king of Persia, there sprung up a vine that spread itself over all Asia; and she being with child, he resolved to kill the infant as soon as born. Its name was Cyrus; but Harpagus being sent to destroy it, preserved it; which Astyages hearing of long after, he caused Harpagus to eat his own son. Harpagus, in revenge, called in Cyrus, who dethroned his grandfather, and thereby ended the monarchy of the Medes; the tyrant thus losing his kingdom by the barbarous means he took to preserve it. See Media and Persia.

ASTYANAX, the only son of Hector and Andromache. After the taking of Troy, he was thrown from the top of a tower by Ulysses' orders

ASTYNOMI, in Grecian antiquity, magistrates in Athens, corresponding to the ædiles of the Romans; they were ten in number. See Ædile.

ASUNDER. On sunder.

Two indirect lines; the further that they are drawn out, the further they go *asunder*. *Spenser on Ireland.*

So looks the pent up lion o'er the wretch
That trembles under his devouring paws;
And so he walks insulting o'er his prey,
And so he comes to tear his limbs *asunder*.
Shakspeare's Third Part of Henry VI. act i. sc. 5.

The way of Fortune is like the milken way in the skie, which is a meeting or knot of a number of small stars; not seen *asunder*, but giving light together: so are there a number of little and scarce discerned vertues, or rather faculties and customes, that make men fortunate. *Lord Bacon's Essays.*

Sense thinks the planets spheres not much *asunder*;
What tells us then, their distance is so far?
Davies.

Greedy hope to find
His wish and best advantage, us *asunder*.
Paradise Lost.

The fall'n archangel, envious of our state,
Seeks hid advantage to betray us worse;
Which, when *asunder*, will not prove too hard,
For both together are each other's guard.
Dryden.

Borne far *asunder* by the tides of men,
Like adamant and steel they meet again.
Dryden's Fables.

All this metallick matter (both that which continued *asunder*, and in single corpuscles, and that which was amassed and concreted into nodules,) subsided. *Woodward's Natural History.*

The diversified but connected fabrick of universal justice is well cramped and bolted together in all parts; and depend upon it, I never have employed, and I never shall employ, any engine of power which may come into my hands, to wrench it *asunder*.
Burke.

Upon the whole, there was in this man something that could create, subvert, or reform; an understanding, a spirit, and an eloquence, to summon mankind to society, or to break the bands of slavery *asunder*, and to rule the wilderness of free minds with unbounded authority; something that could establish or overwhelm empire, and strike a blow in the world that should resound through the universe.
Gratton's Character of Lord Chatham.

ASYLA, the plural of Asylum. The asyla of altars and temples were very ancient; and likewise those of tombs, statues, and other monuments of considerable personages. Thus, the temple of Diana at Ephesus was a refuge for debtors; the tomb of Theseus for slaves. In order to people Rome, a celebrated asylum was opened by Romulus between the mounts Palatine and Capitoline, for all sorts of persons indiscriminately, fugitive slaves, debtors and criminals of every kind. It had a temple dedicated to the god Asylæus. The Jews had their asyla; the most remarkable of which were, the six cities of refuge, the temple, and the altar of burnt offerings; which protected those who had incurred the lash of the law, but not for any deliberate crime. But it was customary among the heathens to allow refuge and impunity, even to the vilest and most flagrant offenders; some out of superstition, and others for the sake of peopling their cities. They had an idea, that a criminal who fled to the temple or altar, submitted his crime to the punishment of the gods; and that it would be impiety in man to take vengeance out of their hands. It was by this means, and with such inhabitants, that Thebes, Athens, and Rome, were first stocked. We even read of asyla at Lyons and Vienne, among the ancient Gauls; and there are some cities in Germany, which still preserve this ancient right. On the medals of several ancient cities, particularly in Syria, we meet with the inscription ΑΣΥΛΟΙ, to which is added ΙΕΡΑΙ. The emperors Honorius and Theodosius, granting the like immunities to churches, the bishops and monks soon selected certain tracts or territories, without which they fixed the bounds of the secular jurisdiction; and so well did they manage their privileges, that convents in a little time became a kind of fortresses, where the most notorious offenders were in safety. These privileges at length were extended, not only to the churches and churchyards, but also to the bishops' houses; whence the criminal could not be removed without a legal assurance of life, and an entire remission of the crime. At last these asyla were stripped of most of their immunities. In Great Britain particularly, they have been entirely abolished as protecting criminals, although there are still some privileged places of refuge for debtors, such as the precincts of the royal palaces, the Abbey of Holy-rood-house, Edinburgh, &c.

ASY'LUM. Gr. *α*, the privative, and *συλη*, spoil; because it was not lawful to spoil those who fled to a sanctuary.

So sacred was the church to some, that it had the right of an *asylum* or sanctuary. *Ayliffe's Parer.*

But noble dames,
In this *asylum* sojourning awhile,
Trust your own merits, and a guardian god.
Glover's Athenaid, book ii.

The adventurer knows he has not far to go before he will meet with some fortress that has been raised by sophistry for the *asylum* of error. *Hawkesworth.*

ASYLUS, the gad-fly. See Asilus.

ASYM'METRY, Asym'metral, Asym'metrous. Α, the privative, and *συμμετρον*, proportion. Want of symmetry, disproportion.

Quantities compared with respect to such a measure, are by geometricians wont to be called *symmetrous* or *asymmetrous*, i. e. commensurable or incommensurable. *Barrow's Mathematical Lectures.*

The *asymmetries* of the brain, as well as the deformities of the legs or face, may be rectified in time. *Grew.*

ASYMPTOTE; from *α* priv. *συν*, with, and *πτοω*, to fall; which never meet; incoincident. Asymptotes are right lines, which approach nearer to some curve; but which, though they and their curve were infinitely continued, would never meet; and may be conceived as
tangents to their curves at an infinite d
See Conic Sections.

ASYNDETON, from the privative
συνδεω, I bind together; a figure in rhetc
plying an omission of words, or a defect
junctive particles. The want of such
represents either the celerity of an actior
haste and eagerness of the speaker. A
celebrated instance, 'veni, vidi, vici,' '
I saw, I conquered.'

AT. From the Latin *ad*. In its
sense designating completion, termination
ing the surface by approach.

For all the field was but of sand
As small as men may see *at* eye
In the desert of Libye.
Chaucer. The House of Fame, b

I speke the thingis that I saigh *at* my fa
ye doen the thingis that ye saighen *at* youre
Wiclif. Jon. chap. vii

Under pardon,
You are much more *at* task, for want of w
Than prais'd for harmless mildness. Sh

Others, with more helpful care,
Cried out aloud, Beware, brave youth, bewa
At this he turn'd; and, as the bull drew
Shunn'd and receiv'd him on his pointed

Their various news I heard, of love and
Of storms *at* sea, and travels on the shore.

ATABALIPA, or Atahualpa, the las
Incas. On the death of his father, in 1
succeeded to the throne of Quito, while
ther Huascar obtained the kingdom o
Not long after a disagreement took pl
hostilities commenced betwixt them, i
Huascar was defeated. The Spaniards
advantage of these disturbances, with P
their leader, invaded Peru, where they w
tertained with no little hospitality by t
and the people; but, instead of making an
for his kindness, they, with their usual tr
held him in captivity. The inca, as a
offered to give the Spaniards a room full
and, when they had got the treasure in th
session, they, with the utmost baseness, b
unhappy monarch at the stake, in 1533.

ATABULUS, in physiology, a provinc
in Apulia, of a dry pinching quality, a
noxious in its effects. The ancient na
speak of the Atabulus in terms of ho
account of the ravages it made among th

ATABYRIS, a very high mountain
island of Rhodes, on which, according to
and Diodorus Siculus, stood a temple of
Atabyrius, whose worship a colony of R
carried into Sicily.

ATACAMA, a chain of mountains i
America, which separate Peru from Qu
where the cold is very violent.

Atacama, a province of Peru, boun
the north by the province of Arica;
Lipes, Salta, and Tucuman; south by
extending to the kingdom of Chili; and
the South Sea. Its population is und
Its chief town, of the same name, lies in l
69° 30′. lat. S. 23° 30′., on a barren spo
100 miles from the sea.

ATACAMITE, in mineralogy, a nam
to a variety of muriate of copper, found

Atacama, in minute crystals and frag-

a Canaanite, rendered memorable by
ing-floor, Gen. l. 10. See Abel-

NTA, in ancien. geography, an island
pus of Eubœa, near the Locri Opuntii,
been originally a city of the Locri,
om the continent in the time of an
, and during an eruption of mount
the fourth year of the ninety-third
in the reign of Artaxerxes-Mnemon.

ta, in fabulous history, the daughter
us, king of Scyros. Being resolved
riage, and at the same time very swift
, to get rid of her numerous suitors,
at she would marry none but the man
lling to risk his life for her, by striving
er, and to forfeit it if he failed. This
mpted and suffered accordingly. But
es, being furnished by Venus with
n apples, dropt them at proper dis-
ng the race, and while she stooped to
a, gained both the race and the prin-
goddess Venus being enraged at the
of Hippomenes, who never performed
had made to erect a temple to her at
nged both him and Atalanta into lions.

Atalanta received from Meleager,
amoured of her, the skin and head of
ian boar, in testimony of her skill in
wounded the animal. This roused
of Toxeus and Plexippus, his uncles,
oured to strip Atalanta of her honor-
Meleager killed them in defence of
nd his mother Althæa, irritated by the
r brothers, committed to the flames
l brand upon which the life of Mele-
ded. This second Atalanta was the
Jasus and Clymene.

a, in entomology, a species of Eu-
ilio, of which a variety is also found
The wings are black, indented, and
a white; a red band across the an-
border of the posterior pair of the
It is sometimes called the red admi-
fly, and by the French Atalante.

YA de Alagouta, a town in Portu-
madura, district of Thomar, with the
ity, and between 1300 and 1400 in-
ighteen miles north-west of Lisbon.

Sortelha, a town of Portugal, in
e of Beira, thirteen miles north-east
ranco.

YAS, Santiago de las, the capital
ince of San Juan de los Llanos, in
a of Granada. It contains 400 house-
is nine leagues from the city of Pore.

RI, a considerable river of New Gra-
enters the Mota.

A, in botany, a name given by the
uinea to a kind of sumach, called, by
us Guineense trifoliatum scabium,
ing trifoliate, and having rough and
ves. They give it as a restorative
ater.

ERA, a town of Spain, in Old Cas-
urgos. In 1053, a battle was fought
en Don Garcia, king of Navarre, and
II. his brother Don Ferdinand, in which the former was defeated and slain.

ATARAXIA, Ataraxy, *αταραξια*. Exemption from vexation; tranquillity. The sceptics, says Glanville, affected an indifferent equiponderous neutrality, as the only means to their ataraxia, and freedom from passionate disturbances.

ATARGATIS Fanum, the temple of the goddess Atergatis, in Bambyce, which was extremely rich. Crassus, in his march against the Parthians, spent several days in weighing the treasure.

ATARNEA, or Atarnya, an ancient town of Mysia, situated between Adramyttium and Pitane, memorable for the marriage of Aristotle with the sister of Hermias, the prince of it.

ATAULFUS, the first king of the Goths in Spain, established his government there, about A. D. 404, and died, A. D. 416. See Spain.

ATAXY, from *α* negative, and *ταξις*, order, the want of order. With physicians, it signifies irregularity of crises and paroxysms of fevers.

> Neither is there any *ataxy* to be feared in bringing in this distinction, betwixt pastors and the flock.
>
> *Bp. Hall's Polemical Works.*

ATCHE, in commerce, the smallest silver coin current in Turkey, worth about one-third of a penny sterling.

ATCHIEVEMENT, or Achievement, vulgarly called Hatchment. Armorial bearings in front of the houses of deceased persons.

Atchievement, in heraldry, denotes the arms of a person or family, together with all the exterior ornaments of the shield, as helmet, mantle, crest, scrolls, and motto, together with such quarterings as may have been acquired by alliances, all marshalled in order.

ATE; from *αταω*, to hurt; the goddess of mischief, in the mythology. She was daughter of Jupiter, and cast down from heaven at the birth of Hercules. For Juno having deceived Jupiter, in causing Euristheus to be born before Hercules, Jupiter expressed his resentment against Ate, as the author of that mischief, and threw her headlong from heaven to earth, swearing she should never return thither again. Homeri Il. xix. 125. Her being the daughter of Jupiter means, according to mythologists, that no evil happens to us but by the permission of Providence; and her banishment to earth the terrible effects of divine justice among men.

ATEGAR; from the Saxon aeton, to throw, and gar, a weapon; a weapon among the Saxons, which seems to have been a hand-dart.

ATEGUA, or Attegua, an ancient town of Spain, placed by some in the road from Antiquara, now Antequera, to Hispalis, or Seville; by others, near Alcala Real. It was situated near the river Flumen Salsum, or Salsusa. Pompey, having passed this river, encamped between Ucubis and Ategua, to oblige Cæsar to raise the siege of the latter place; but it was taken in his presence.

ATELIA, an exemption from taxes, or other burdens, is particularly used in some ancient laws, for an exemption from offices granted to the Egyptian clergy by Constantius.

Atelia, an ancient town of Campania in Italy, between Capua and Neapolis. The ruin are still to be seen about eleven miles from the modern Aversa.

ATELLANÆ Fabulæ, Atellani Ludi, a species of farce, so named from Atella, called also Osci, from their inventor, in whose territory Atella lay. They were generally interlarded with much ribaldry and buffoonery, and sometimes were exordia, or interludes, presented between the acts of other plays. The actors in these farces were not reckoned among the common players, nor deemed infamous; but retained the rights of their tribe, and might be enlisted for soldiers, the privilege only of free men.

ATEMPO Giusto, in music, signifies to sing or play in an equal, true, and just time.

ATENA, a town of Italy, in Naples, near the Negro, twelve miles north-west of Marsico, and twenty-two north of Policastro.

ATER, in conchology, a species of mytilus, described in Molin. Hist. Chili, p. 177, and said to be frequent on the shores of that country: also a species of strombus found in the boggy parts of the island of Amboyna.

Ater, in entomology, 1. a species of dermestes found in the neighbourhood of Upsal. 2. A species of hydrophilis, a native of Europe. 3. A species of byrrhus that inhabits Germany. 4. A species of tenebrio found in Europe. 5. A species of carabus that inhabits Denmark. 6. A species of cerambyx (Callidium, Fabr.) found in the environs of Venice. 7. A species of gryllus (Acheta, Fab.) that inhabits Surinam. 8. A species of cimex.

Ater, in natural history, a species of anguis; also a species of limax, slug or snail

Ater, in ornithology, a species of falco; also a species of psittacus.

ATERGATIS, in mythology, a goddess of the Syrians and Parthians, supposed to be the mother of Semiramis, and called Derceto by the Greeks. She was represented with the face and breasts of a woman, but the rest of her body resembled a fish. Vossius makes the name Phœnician, from addir-dag, the great fish; and says it signifies, without fish; whence he conjectures that the votaries of this deity abstained from fish.

ATERNUM, in ancient geography, 1. a town of Lucania in Italy, now called Aterni. 2. A town in the territory of the Piceni, now called Pescara, a port town of Naples, on the Adriatic.

ATERRIMA, in conchology, a species of nerita, figured by Chemnitz.

Aterrima, in entomology, 1. a species of blatta. 2. A new British species of chrysomela, described by Mr. Marsham, Ent. Brit.

Aterrimus, 1. a species of curculio, very common in Europe; black, with the wing-cases shining. Linn. Fn. Sv. Fabr., &c. 2. A species of carabus. 3. A species of elater, found in the north of Europe. 4. A species of cimex (rotundatus, sec.) that inhabits Spain.

Aterrimus, in ornithology, the specific name of the great black cockatoo of New Holland.

ATESTE, a town in the territory of Venice in Italy, now called Este.

ATH, or Æth. See Æth.

Ath, Atha, or Athe, among our Anglo-Saxon ancestors, signifies an oath, especially that taken by way of purgation. In this sense, we m with breaking of ath, privilege of ath, atha, ordela.

ATHABOLI, or Agastoboli, a town Turkey in Europe, on the Black Sea, in th extensive province of Romania, sixty-eight mile north-east of Adrianople. Long. 27° 39′ E., lat 42° 27′ N.

ATHALARIC, the grandson of Theodoric, and the second king of the Ostrogoths in Italy, succeeded A. D. 526, and reigned along with his mother Amalasuntha, about eight years. They both died A. D. 534.

ATHALIAH, עתליה, Heb. i.e. the time of the Lord; the daughter of Ahab king of Israel, by Jezebel, and wife of Jehoram king of Judah See 2 Chron. xxi. 10, and xxiii. 12.

ATHAMADULET, or Athemadaulet, the prime minister of the Persian empire. He is great chancellor of the kingdom, president of the council, superintendant of the finances; and has the charge of all foreign affairs. He is in effect viceroy of the kingdom.

ATHAMANTA, Spignel, in botany, a genus of the digynia order, and pentandria class of plants, ranking in the natural method under the fourth order, umbellatæ. The fruit is oblong and striated; and the petals are inflected and emarginated. Of this genus Linnæus enumerates nine species: but none of them merit particular notice; except the Cretensis, or Daucus Creticus, which grows wild in the Levant and the warmer parts of Europe. The leaves are irregularly disposed, and formed like those of fennel. The flower-stalk rises about two feet high, sending out many branches, terminated at the top by compound umbels, composed of nearly twenty small ones. The seeds have a warm biting taste, with an agreeable aromatic smell. They are kept in the shops as a carminative; but are little used in practice.

ATHANASIA, Goldilocks, in botany, a genus of the polygamia æqualis order, and syngenesia class of plants; ranking in the natural method under the forty-ninth order, compositæ discoides. The receptacle is chaffy; the pappus chaffy and very short, and the calyx imbricated. There are twenty species, all tender plants except one; and none of them possessed of much beauty.

Athanasia, in ancient medicine, an epithet given to a kind of antidotes, supposed to have the power of prolonging life, even to immortality. In the Augustan dispensatory we still find a medicine under the appellation of athanasia magna, recommended against dysenteries and hæmorrhages.

Athanasia, in botany, is used by some authors for tansy.

ATHANASIAN Creed; a formulary, or confession of faith, long supposed to have been drawn up by Athanasius bishop of Alexandria, in the fourth century, to justify himself against the calumnies of his Arian enemies; but now generally allowed among the learned not to have been his. Dr. Waterland ascribes it to Hilary bishop of Arles, for the following among other reasons: 1. Because Honoratus of Marseilles, the wri

elis us, that he composed an Expo-
Creed; a more proper title for the
than that of Creed simply, which it
2. Hilary was a great admirer and
St. Austin; and the whole compo-
creed is in a manner upon St. Aus-
both with respect to the trinity and
on. 3. It is agreeable to the style
far as we can judge from the little
of his works. About A. D. 570; it
amous as to be commented upon;
ral years after, it had not acquired
Athanasian, but was simply styled
faith. This creed obtained in France
850, and was received in Spain and
out 100 years later. As to our own
have clear proofs of its being sung
n our churches in the tenth century.
ommon use in some parts of Italy,
in the diocese of Verona, about A.D.
s received at Rome about 1014. As
and oriental churches, it has been
whether any of them ever received
all: with regard to its matter, it is
ummary of the true orthodox faith,
mnation of all heresies, ancient and
nhappily, however, it has proved a
ce of unprofitable controversy and
animosity even down to the present

ount given of Athanasius's creed,'
shop Tillotson, in a letter written
th, Oct. 23, 1694, to a right reverend
ems to me no wise satisfactory:
ere well rid of it.' Bishop Taylor,
rty of Prophesying, sect. ii. says,
onsidered, concerning Athanasius's
many people understand it not, how
natural reason it seems, how little
says of those curiosities of expli-
how tradition was not clear on his
article itself, much less for those
inutes; it had not been amiss if the
ent had been left to Jesus Christ:
o me it seems very hard to put un-
s into the creed, and so to make it
n article of faith.' 'It certainly is
ted,' says Dr. Tomline, the present
orcester, in his Elements of Christian
ol. ii. p. 220, 'that assertions of so
a nature,' referring to the damnatory
explained and unqualified, should
ed in any human composition.' 'I
acknowledge,' p. 222, 'that, in my
notwithstanding the authority of
, our church would have acted more

was born in Egypt. He followed St. Alexander to the council of Nice, in 325, where he disputed against Arius, and the following year was made bishop of Alexandria; but, in 335, was deposed by the council of Tyre: when, having recourse to the emperor Constantine, the Arian deputies accused him of having hindered the exportation of corn from Alexandria to Constantinople; on which the emperor, without suffering him to make his defence, banished him to Treves. The emperor, two years after, ordered him to be restored to his bishopric: but, on his return to Alexandria, his enemies brought fresh accusations against him, and chose Gregory of Cappadocia to his see; which obliged Athanasius to go to Rome, to reclaim it of pope Julius. He was there declared innocent, in a council held in 342, and in that of Sardica, in 347, and two years after was restored to his see by order of the emperor Constans; but, after the death of that prince, he was again banished by Constantius, on which he retired into the deserts. The Arians then elected one George in his room; who being killed, in a popular sedition under Julian, in 360, Athanasius returned to Alexandria, but was banished under Julian, and restored to his see under Jovian. He addressed to that emperor a letter, in which he proposed, that the Nicene creed should be the standard of the orthodox faith, and condemned those who denied the divinity of the Holy Ghost. He was also banished by Valens, in 367, and afterwards recalled. He died on the 2d of May, 373. His works principally contain a defence of the mystery of the Trinity, and of the incarnation and divinity of the Word and Holy Spirit. There are three editions of his works which are esteemed; that of Commelin, printed in 1600; that of Peter Nannius, in 1627; and that of father Montfaucon.

ATHANATI, i. e. immortals; from α, privative, and θανατος, death; a body of cavalry, among the ancient Persians, consisting of 10,000 men, always complete, because when any one of them died another was immediately put into his place.

ATHANOR. Chemists have given this name to a furnace so constructed, that it can always maintain an equal heat, and lasts a long time, without addition of fresh fuel. The body of the athanor has nothing in it particular, and is constructed like ordinary furnaces. But at one of its sides, or its middle, there is an upright hollow tower, which communicates with the fire-place, by one or more sloping openings. This tower ought to have a lid, which exactly closes its upper opening. When the athanor is to be used, as much lighted coal is put in the fire-place as is ancient chemists were in search of the art of making gold; and being excited by this powerful motive, and confident of success, they spared no trouble or expense to accomplish this design.—They undertook, without hesitation, operations which required great length of time, and unremitted heat. Whereas now, these alluring hopes having vanished, the cultivators of chemistry have no other view than to extend and perfect the theory of this essential part of natural philosophy. This motive, although undoubtedly much nobler than the former, seems, however, to be less powerful over most men. For now, all long and laborious operations, whence chemistry might receive great advantages, are neglected, as being tiresome and disgustful. There is, in fact, a considerable difference betwixt the hope of explaining a philosophical phenomenon, and that of obtaining an ingot of gold capable of producing many others. Hence the instruments employed in long operations, and particularly the athanor, are now much neglected; and also, because the fuel in the tower is apt to stick there, or fall down at once in too great quantity. The lamp furnace, which is a true athanor, may be successfully employed in operations which do not require much heat.

ATHAPESCOW, a lake in the north-west of North America, and fifty-ninth degree of north latitude, so called from a tribe of Indians inhabiting its banks. It is contiguous to the Lake of the Hills, and has now become so shallow, that, according to Mackenzie, it will in time be probably converted into a swamp.

ATHARER, in astrology, a term used when the moon is in the same degree and minute with the sun.

ATHBOY, a town of Ireland, in the county of Meath, situated on a stream of the same name. It was a borough, which returned members to the Irish parliament before the union. Three fairs are held here annually. Distant twenty-nine miles north-west of Dublin.

ATHEE, a town of France, in Anjou, with 260 houses, belonging to the arrondissement of Chateau-Gontier, in the department of Mayenne. It lies on the river Oudon, five leagues S. S. W. of Laval.

ATHEE, a town of France, in the department of the Indre and Loire, arrondissement of Tours, on the left bank of the Cher, with 255 houses, three leagues south-west of Amboise.

A'THEISM,
A'THEIST, *n.* & *adj.*
ATHEIST'ICAL,
ATHEIST'ICALLY,
ATHEIST'ICALNESS,
ATHEIST'ICK,
A'THEIZE,
A'THEOUS.

A, privative, Θεος, God; without God. One of its significations is illustrated by the following citation from St. Paul's Epistle to the Ephesians, A Θεοι εν τῳ κοσμῳ, without God in the world.

God never wrought miracles to convince *atheism*, because his ordinary works convince it. *Bacon.*

Nor stood unmindful Abdiel, to annoy
The *atheist* crew. *Milton, Paradise Lost.*

Thy Father, who is holy, wise, and pure,
Suffers the hypocrite, or *atheous* priest,
To tread his sacred courts. *Paradise Regained.*

Men are *atheistical*, because they are first vicious; and question the truth of Christianity, because they hate the practice. *South.*

Is it not enormous, that a divine, hearing a
sinner talk *atheistically*, and scoff profanely at reli
should, instead of vindicating the truth, tacitly ap
the scoffer?

Though he were really a speculative *atheist*;
if he would but proceed rationally, he could not
ever, be a practical *atheist*, nor live without Go
this world.

I entreat such as are *atheistically* inclined, to-
sider these things. *Till*

It is the common interest of mankind, to p
all those who would seduce men to *atheism*.

Atheist, use thine eyes;
And, having view'd the order of the skies,
Think (if thou canst) that matter, blindly hurl'd
Without a guide, should frame this wondrous wor
Cr

No *atheist*, as such, can be a true friend, an af
tionate relation, or a loyal subject. *Bent*

Lord, purge out of all hearts profaneness
atheisticalness. *Hammond's Fundament*

This argument demonstrated the existence o
Deity, and convinced all *atheistick* gainsayers.
Ray on the Creat

'Chester, civilized as well as Wales, has dem
strated, that freedom and not servitude is the c
of anarchy; as religion, not *atheism*, is the true
medy for superstition. *Bur*

ATHEISM, absurd and unreasonable as it
has had its votaries and martyrs. In the sev
teenth century, Spinosa, a foreigner, was
noted defender. Lucilio Vanini, an Italian,
native of Naples, publicly taught atheism
France, about the beginning of the seventee
century; and being convicted of it at Toulou
was condemned and executed.

An ATHEIST may be defined, a person who d
not believe in any thing superior to the mate
world. Many people both ancient and mod
have pretended to be, or have been reckon
atheists; but it is justly questioned whether
man ever seriously adopted such a princi
These pretensions, are often, indeed, founded
pride and affectation. Such motives, toge
with an honest indignation against the imp
tions and intolerance of superstition and pr
craft (which had so often deluged France
blood), seem to have co-operated to prod
that extraordinary moral phenomenon, exhib
in the French Convention, of several of the l
ing members openly avowing themselves athei
in consequence of which the whole nation
absurdly branded with atheism. Cicero, howe
represents it as a probable opinion, that t
who apply themselves to philosophy, believe t
are no gods. This must doubtless be meant o
academic philosophy, to which Cicero him
was attached, and which taught to doubt of e
thing. On the contrary, the Newtonian ph
sophers, continually recur to a Deity, whom
always find at the head of their chain of nat
causes. Among the modern philosophers,
have been the principal advocates for the e
tence of a Deity, are Sir Isaac Newton, B
Cheyne, Nieuwentyt, &c. To which may be a
many others, who, though of the clergy, yet
distinguished themselves by their philosoph
pieces in behalf of the existence of a God;
Derham, Bentley, Whiston, Ray, Samuel
John Clarke, Fenelon, &c. So true is that
ing of Lord Bacon, that though a smatterin

11

ATHANASIUS.

ATHELSTANE.

ASCLEPIADES.

ATTILA.

ASHMOLE.

ATABALIPA.

T. ASTLE.

ATTERBURY.

ASTRUC.

London, Published by Thomas Tegg, Cheapside.

philosophy may lead a man into atheism, a deep draught will certainly bring him back again to the belief of a God and Providence; agreeably to what the poet observes of learning in general:

> 'A little learning is a dangerous thing:
> Drink deep, or taste not the Pierian spring.'

Archbishop Tillotson justly observes that speculative atheism is unreasonable on five accounts: 1. Because it gives no tolerable account of the existence of the world: 2. It does not give any reasonable account of the universal consent of mankind in this comprehension, that there is a God: 3. It requires more evidence for things than they are capable of giving: 4. The atheist pretends to know what no man can know: 5. Atheism contradicts itself. Under the first of these he advances the following arguments: 'I appeal to any man of reason whether any thing can be more unreasonable than obstinately to impute an effect to chance, which carries in the very face of it all the arguments and characters of a wise design and contrivance. Was ever any considerable work, in which there was required a great variety of parts, and a regular and orderly disposition of those parts, done by chance? Will chance fit means to ends, and that in ten thousand instances, and not fail in any one? How often might a man, after he had jumbled a set of letters in a bag, fling them out upon the ground before they would fall into an exact poem; yes, or so much as make a good discourse in prose? And may not a little book be as easily made as the great volume of the world? How long might a man be in sprinkling colors upon canvass with a careless hand, before they would happen to make the exact picture of a man? And is a man easier made by chance than his picture? How long might twenty thousand blind men, who should be sent out from several remote parts of England, wander up and down before they would all meet upon Salisbury plain, and fall into rank and file in the exact order of an army? Yet this is much more easy to be imagined than how the innumerable blind parts of matter should rendezvous themselves into a world. A man that sees Henry the Seventh's chapel at Westminster, might with as good reason maintain (yea, with much better, considering the vast difference betwixt that little structure and the huge fabric of the world) that it was never so contrived or built by any means, but that the stones did by chance grow into those curious figures, into which they seem to have been cut and graven; and that upon a time (as tales usually begin) the materials of that building, the stone, mortar, timber, iron, lead, and glass, happily met together; and very fortunately ranged themselves into that delicate order in which we see them now, so close compacted, that it must be a very great chance that parts them again. What would the world think of a man that should advance such an opinion as this, and write a book for it? If they would do him right, they ought to look upon him as mad, but yet with a little more reason than any man can have to say that the world was made by chance, or that the first men grew out of the earth as plants do now. For can any thing be more ridiculous, and against all reason, than to ascribe the production of men to the first fruitfulness of the earth, without so much as one instance and experiment, in any age of history, to countenance so monstrous a supposition? The thing is, at first sight, so gross and palpable, that no discourse about it can be more apparent. And yet, these shameful beggars of principles give this precarious account of the original of things; assume to themselves to be the men of reason, the great wits of the world, the only cautious and wary persons that hate to be imposed upon, that must have convincing evidence for every thing, and can admit of nothing without a clear demonstration for it.'

ATHELING, Adeling, Edling, Ethling, or Etheling; from æthel, noble, Saxon; a title among the Anglo-Saxons, properly belonging to the heir apparent to the crown. This appellation was first conferred by king Edward the Confessor on Edgar, to whom he was great uncle, when, being without any issue of his own, he intended to make him his heir. See Edgar.

ATHELNEY, an island of England, in the county of Somerset, formed by the junction of the rivers Tone and Parret, a few miles below Taunton. Alfred took refuge here while the country was overrun by the Danes, and is said to have built an abbey on the spot. Many antiquities were dug up in 1674

ATHELSTANE, a Saxon king of England, natural son of Edward the Elder, and grandson of the great Alfred. He succeeded in 925, and reigned sixteen years. There was a remarkable law passed by this prince, which shows his just sentiments of the advantages of commerce, as well as the early attention paid to it in this country: viz. that any merchant who made three voyages on his own account beyond the British Channel, should be entitled to the privilege of a thane, or gentleman.

Athelstane, king of Northumberland, or, according to Buchanan, a Danish chief, who obtained a grant of that country from king Alfred, flourished about the beginning of the ninth century; and, carrying on a predatory war in Scotland, was killed in battle by Hungus, king of the Picts, at the village since named from him Athelstaneford, near the rivulet called Lugdown Burn, which is said to be a corruption of Rug Down, and to have taken its name from the circumstance of Athelstane being rugged down, or pulled from his horse, in the battle.

ATHELSTANEFORD, a village and parish of Scotland, in the county of Haddington. It was the birth-place of Blair, the author of The Grave; and here Mr. Home was settled as parish minister, but was obliged to relinquish the living in consequence of having written the tragedy of Douglas. Distant two miles from Haddington, seventeen from Edinburgh, east.

ATHENA, in the ancient physic, a plaster or liniment commended against wounds of the head and nerves, of which we find descriptions given by Oribasius, Ælius, and Ægineta.

ATHENÆA, a feast of the ancient Greeks held in honor of Minerva, whom they called Αθηνη. They were afterwards called Panathenæa.

ATHENÆUM, in antiquity, a public place

wherein the professors of the liberal arts held their assemblies, the rhetoricians declaimed, and the poets rehearsed their performances. These places, of which there were a great number at Athens, were built in the manner of amphitheatres, and encompassed with seats called cunei. The three most celebrated Athenæ were those at Athens, at Rome, and at Lyons; the second of which was built by the emperor Adrian.

ATHENÆUS, a Greek grammarian, born at Naucratis in Egypt, in the third century, one of the most learned men of his time. Of all his works we have none extant but his Deipnosophis, i. e. the sophists at table; there is a great fund of facts and quotations in this work, which render it very agreeable to admirers of antiquity, as they are nowhere else to be met with.

Athenæus, a mathematician, who wrote a treatise on mechanics, which is inserted in the works of the ancient mathematicians, printed at Paris in 1693, in folio, in Greek and Latin.

Athenæus, a physician, born in Cilicia, contemporary with Pliny, and founder of the pneumatic sect. He taught that the fire, air, water, and earth, are not the true elements, but that their qualities are, viz. heat, cold, moisture, and dryness; and to these he added a fifth element which he called spirit, whence his sect had their name, Pneumatics.

ATHENAGORAS, an Athenian philosopher, who flourished about the middle of the second century; and was equally remarkable for his zeal for Christianity, and his great learning; as appears from the Apology which he addressed to the emperors Aurelius Antoninus and Lucius Commodus; as well as from another work still extant upon the Resurrection. They are both written in a style truly Attic.

ATHENATORIUM, among chemists, a thi glass cover placed on a cucurbit, having a slen umbo, or prominent part, which enters like stopple, within the neck of the cucurbit.

ATHENE; Αθηνη, Greek; the name giv by the Greeks to Minerva. See Minerva.

ATHENIPPUM, in the ancient physic, a co lyrium commended against divers diseases of th eyes; thus denominated from its inventor Athe nippus. It is described by Scribonius Largu and Gorræus. Galen mentions another athenippum, of a different composition, by which it appears that this was a denomination common to several collyriums.

ATHENODORUS, a famous stoic philosopher, born at Tarsus, who went to the court of Augustus, and was made by him tutor to Tiberius. Augustus had a great esteem for him, and found him by experience a man of virtue and probity. He was accustomed to speak very freely to the emperor. Before he left the court to return home, he warned the emperor not to give himsel up to anger, but, whenever he should be in passion to rehearse the twenty-four letters of th alphabet before he resolved to say or do an thing. He did not live to see his bad success i the education of Tiberius.

ATHENOPOLIS, a town of the Massilienses an ancient nation of Gaul, conjectured to be th same with Telo Martius, now Toulon.

ATHENRY, a village of Ireland, in th county of Galway, formerly a borough, and walled town. In the year 1315 a battle wa fought near this town between the English an Irish, in which the latter was defeated. In 15 the Irish put all the inhabitants to the swor Distant ten miles east of Galway, ninety-on from Dublin.

ATHENS.

ATHENS, in geography and ancient history, a celebrated kingdom of ancient Greece, the capital of Attica, situated 100 miles N. E. of Lacedæmon and 320 S. by W. of Constantinople. It is at present the chief town of Livadia, a province of the Turkish empire, and is seated in the Gulf of Engia, Lon. 23° 57′ E., lat. 38° 5′ N.

Origin and Ancient Name.—The kingdom of Attica received the name of Ogygia, from Ogyges, commonly placed 1586 years before Christ; but Athens is scarcely mentioned in history till some time after the days of Cecrops, an Egyptian by birth, supposed to be contemporary with Moses, and affirmed by the Greeks to be the first builder of cities. This leader who appears to have either founded or new modelled the Acropolis, or ancient city, under the name of Cecropia, placed himself at the head of it, and introduced from Sais in Egypt, the worship of Neith, adopted by the people under the name of Ἀθηνη. In the early ages of Greece, that which was afterwards called the citadel, was the whole city, and called Polis, or 'the city,' by way of eminence.

Alteration of Name.—In the reign of Erichthonius it lost the name of Cecropia, and acquired that of Athens, from Αθηνη, the Greek name of the goddess Minerva, the Neith of th Egyptians already mentioned, who was esteeme its protectress. This old city was seated on th top of a rock in the midst of a large and pleasa plain, which, as the number of inhabitants increased, became full of buildings; which induce the distinction of Acropolis and Catopolis, i. e. of the upper and lower city. The extent of th citadel was sixty stadia; it was surrounded by olive trees, and fortified with a strong palisade; in succeeding times it was encompassed with strong wall, in which there were one very larg and eight small gates.

Original Succession and Government.—The successors of Cecrops are but imperfectly known, but, according to the most ancient traditions, they were 1. Amphictyon; 2. Erectheus I. the same as Erichthonius, the place of whose interment is still called Erectheium. It was th prince who raised an image of Minerva made of olive wood in the Cecropia, and also in honor of the goddess instituted festivals called Athenæa, to be celebrated by the twelve Attic cities. To him succeeded 3. Pandion I. 4. Erectheus II. 5. Ægeus. 6. Theseus. The last of whom established the Prytaneum, a court of judicatur common to all Attica; also the Panathenæa, sacred festivals to be observed by all the provinces in the Erechtheium every five years. His wise government increased the power and population of Athens, and finally, about the year B. C. 1300, concentrated the other eleven cities of Attica under one general government.

INTRODUCTION OF PELASGI, AND RISE OF ATHENIAN GREATNESS.—The Pelasgi came to Athens from the North B. C. 1192, to whom those beautiful specimens of polygonal architecture are ascribed, which are found in the ancient fortresses of Greece and Italy, consisting of irregular blocks carefully adjusted to each other, without cement, whereas the Cyclopeian, with which it has been frequently confounded, is composed of masses laid together and the interstices filled up with smaller stones.

Next to the Pelasgi, Athens stands indebted for much of her early grandeur to Pisistratus, who, with his sons, founded a public library and two magnificent temples, one to Jupiter Olympus, the other to Apollo Pythias, besides which he collected and edited the works of Homer.

INVASION OF XERXES AND RE-BUILDING OF ATHENS.—Athens was now rising in population and importance; possessed of considerable maritime ascendency, together with an extent of territory and influence beyond any other state in Greece, Sparta excepted, and the invasion of Xerxes served to raise her to the pinnacle of military glory. It is true the Persians at first were successful in burning and destroying the ancient city founded by Cecrops; but, after their shameful defeat at Thermopylæ, the city of Athens rose from its ruins on an enlarged and improved scale, the queen of empire, enriched by the resources of the invasion, dignified by a naval superiority, by which she commanded the islands of the Archipelago, together with the colonies of Asia, Macedonia, and Thrace, embellished by the hand of Minerva, who seems to have employed herself the fifty years intervening between the victory of Salamis and the Peloponnesian war, to beautify the city of her residence; her ancient Cecropian monuments yet remaining upon the Acropolis.

SURVIVES THE PELOPONNESIAN WAR.—Themistocles restored the military works of the city, and fortified it as before. Cimon erected the Temple of Theseus, the Stoæ, the Pœcile, the Dionysian Theatre, the Gymnasia, together with the ornaments of the Academy and the Agora. Pericles conferred upon it the Odeum, the Parthenon, and the Propylæa, and numerous other works, rendering it the wonder of nations. The superb glory of Athens was little injured by the war of Peloponnesus. The defeat of Ægospotami, it is true led to the destruction of the walls of Piræus, but these were shortly restored, and so skilful was Minerva that defeats as well as victories seemed to raise the political importance, and enrich the site of her favorite capital.

RAVAGES OF PHILIP OF MACEDON.—The rise of Macedon seemed however to eclipse the glory of Athens, and her alliance with Rome was the first political blow that tended to the real injury of this ancient city. Philip of Macedon invested her before her allies could come to her succour, and as the city was too well fortified to be taken easily, he ravaged the suburbs, overthrew the temples, shrines, images, and tombs; broke the marbles which were too precious to yield to the influence of fire; the Cynosarges and the Lycæum, all the favorite retreats of pleasure and devotion were alike felled by the arm of the destroyer.

SIEGE BY SYLLA.—About 84 years B. C. during the Mithridatic war, the Roman Sylla resolved upon the conquest of Athens, and employed all Greece with her arms and treasures, to aid his design. He plundered Epidaurus and Olympia, carried away the precious deposits of Delphi, felled the groves of the Academy and the Lycæum. By means of an ill-fortified wall near Heptachalcos he passed the sacred gates at midnight, and the streets of the Cerameicus are said to have run with blood. The city however suffered little, but the destruction of the Piræan fortifications and the arsenal of Philo prevented the re-assumption of maritime power, and with that fell for ever the political importance of Athens. (Plutarch, in vitâ Syllæ). As a school of science and art, Athens nevertheless maintained her dignity among enlightened nations, and foreigners from all parts resorted there to attend the lectures of her philosophers.

SCIENCE AND ARCHITECTURE.—The Romans whose taste in some respects was formed upon the Grecian models, added considerably to the embellishment of the city. Julius Cæsar erected the Propylæa of the new Agora nearly at his own expense. Statues were erected to Brutus and Cassius by the friends of those distinguished Romans. Antony endowed the capital with numerous public gifts and a large accession of insular territory; nor were Augustus and other illustrious personages in that powerful empire remiss in testifying their friendship for the city of Minerva, and some of them were even initiated into the Eleusinian mysteries (for the nature of which see ELEUSINIA.) Hadrian, on his elevation to the imperial dignity, was one of the greatest benefactors Athens enjoyed after the overthrow of her civil hierarchy. He finished the temple of Jupiter Olympius, which Pisistratus had begun ages before, and such was its beauty, costliness, and magnitude, that it was considered the glory of Athens; superb beyond any other structure in Greece. The temple of the winds, more properly called the Honologium, in the Agora, was the benefaction of Andronicus Cyrrhestes. A new theatre was raised by Agrippa, and another was shortly afterwards erected at the foot of the Acropolis by Herodes Atticus, the ruins of which are yet remaining. The casing of the seats of the stadium with pentelic marble, is attributed to the generous profusion of the same illustrious individual.

SPLENDOR UNDER THE ANTONINES.—In the Antonine age Athens enjoyed its greatest splendor. It had been enriched by the accumulated magnificence of six centuries. The works of the age of Pericles, according to Plutarch, retained the freshness of modern buildings, and a bloom was diffused over them, which preserved their aspect untarnished. Athens, in a remarkable manner escaped the ravages and plunder which followed the conquest of Greece, and the still more formidable dilapidations of time itself. She sat supreme amid the convulsions of states and changes of governments, rather contributing than otherwise to the imperial grandeur. Having pursued the history of Athens up to the zenith of her glory, we shall present the reader with a brief description of that eminent seat of learning and politeness, as she existed in her prosperous ages.

APPEARANCE AND HARBOURS.—Seated upon a gulf, Athens, commanding three harbours surrounded by dock-yards and buildings, forming a continued town more extensive than Athens itself. The first of these was the Piræus, the present Δράκων of the Greeks, the Aslân Limâni of the Turks, and the Porto Leone of the Italians. The Greek and Italian names being derived from an immense line of Pentelic marble which stood originally upon the beach, nearly thirty-five or forty stadia distant from the city, and was displaced at the Venetian siege. The harbour had three docks, Cantharos, Aphradisium, and Zea; the first derived its name from an ancient hero, the second from the goddess Venus, the third from bread corn; it was dignified with several public buildings. A stoa, including five distinct stoæ or porticos under the general name of Macra Stoa; two temples of Venus; a sanctuary of Jupiter Soter; the Hippodameia, from Hippodamus the architect, which was used as an agora or commercial exchange; two great fora or markets, one near the portico, the other near the city; the tribunal Phreathys; the bath Serangium; a deigma or maritime exchange, and a theatre, about 240 feet in diameter, some traces of which are yet remaining. The second of these harbours was Mynychia, to the east of Piræus, from which it is separated by a peninsula of the same name. It is of circular figure, and now called Stratistiki, and so strong is this promontory or peninsula by nature, that Epimenides said, if the Athenians saw what mischief it would one day produce to them, they would eat it away with their teeth. This part of Athens is adorned with a Dionysaic theatre, a temple of Diana of the Doric order, some remains of which are yet standing on the shore; also a Bendideium, probably in honor of the same goddess whose Thracian name was Bendis. The third and most ancient part was Phalerum, to the east of Mynychia, distant from the city, according to Thucydides, thirty-five stadia, and according to Pausanias twenty. It was formerly famous for the temple of Jupiter, Ceres, and Minerva Sciras, which have been long whelmed in ruin, and lost in the lapse of time.

WALLS, FORTIFICATIONS, &c.—Peiræeus from its natural division into three great basins, and also from its great capacity, became an object of capital importance with the Athenians; and accordingly it was fortified strongly in the second year of the Peloponnesian wars. The works which surrounded it consisted of a wall nearly seven miles in length and sixty feet in height. The long walls (Τά μακρὰ Τειχη, or Τὰ σκέλη) extended from the asty or city, on the north to Peiræeus, and on the south to Phalerum; a distance of five miles, protecting the city on every side from which any danger was apprehended. These walls ran parallel to each other at the distan of 550 feet, from the centre of the Phaleric hill the direction of the entrance of the Acropol The circumference of the whole walls, includ those of the ports, the city, and the long wa appears to have been about twenty miles. Th walls were surrounded with cemeteries. asty was embraced by the streams of Ilissus Cephisus, uniting in the marshes of Phaler The gates were, Melitides, Peiraicæ, Acharn Ithoniæ, Hippades, Heriææ, Diomeiæ, Dioch and Dipylum; called also, Thriasia, Sacr Cerameicæ.

ENTRANCE FROM THE GATE PEIRAICÆ.— cenotaph to Euripides adorned the outside of t gate Peiraicæ; within it stood the Pompeio for the arrangement of processions; and the interior of the city, from this view, seemed crowded with temples, statutes, and porticoes. The Pny (διὰ το πεπυκνῶσθαι), in which certain popular assemblies were held, stood on the right; the road continuing through the district of Ceramicus, passed the Stoa Basileius, or portico of the king, where the Archon held his court; at which point commenced the street of Hermæ, so called from Mercury, with whose head it was said to have been adorned; and after passing a considerable distance, ended in a stoa called Pœcile, from its numerous and highly finished pictures of the taking of Troy, the battle of Marathon, the battle of Theseus and the Amazons, and the battles with the Lacedemonians at Œnoe and Argolis; to keep alive the remembrance of which the captured shields were also suspended.

AGORA.—The Agora, fronting the Pœcile, was planted with trees, and beautifully divided into markets, streets, porticoes, public halls, &c. One of these halls was for the assembling of the senate, another for the Prytanes to dine. Here stood a noble temple, also, to the mother of the gods, and altars to the twelve gods, to Pity, Modesty, Fame, and Impetuosity. The Areopagus sloped down from the north to a beautiful plane, where stood the temple of Theseus. It was called Mars Hill, because Mars was the first person tried here for murder, viz. for the murder of Hallirhotius. The Theseium, from its beautiful remains, must have been a most magnificent spot. It is a peripteral hexastyle, having on the sides thirteen columns of the doric order, each three feet four inches diameter at the base. The whole building is of pentelic marble, thirty feet in height, from the base to the summit of the pediment. The cell is forty feet in length, and twenty in breadth; the depth of the posticum is twenty-seven feet; that of the pronaos and portico thirty three. Contiguous to the Theseium were the Gymnasium of Ptolemy, the temple of the Dioscuri, and the Horologium of Andronicus Cyrrhestes. To the south-east stood the Prytaneum or Senate house, from which, the street of the tripods led to the theatre of Bacchus. This street was adorned by the victors in the prize games, and amongst its magnificent decorations stood the choragic monument of Lysicrates (the lantern of Demosthenes), the circular roof of which still preserves the triangular apex, intended to receive his native tripod. Adjoining to the theatre above mentioned stood the Odeum of Pericles, from which, after passing through a gateway erected by Hadrian in the modern walls, arose the temple of Jupiter Olympius, which was completed and dedicated by the same emperor. It was of decastyle construction consisting of one hundred and twenty-four columns, sixteen of which are yet standing. Within it was a colossal statue of the god, made of ivory and gold (chryselephantine). The whole length of the sacred precinct (περιβολος) was 689 feet, and its circuit about half a mile.

The Hill Musæum. — The fountain of Enneacrunos or Callirrhoe, the only natural spring by which Athens was supplied with palatable water, was on the Ilissus; from which, proceeding to the south-west angle of the walls we come to the hill Musæum, the summit of which is embellished by a monument of the Syrian C. J. Antiochus Philopappus, grandson of Antiochus IV. the last king of Comagene. He erected it on his return to Athens, after having been greatly honored by Trajan at Rome, and even made Consul and Frater Arvalis. The lower part was embellished with the grand triumph of his illustrious patron; above which were seated statues of himself, his grandfather Antiochus, and Seleucus Nicator, founder of the original dynasty. This monument has excited a degree of attention little inferior to that of Lysicrates above-mentioned.

Acropolis.—On the north-east side of the Musæum, rises the Acropolis or ancient citadel. The rock is lofty, abrupt, and inaccessible, except the front, which is toward the Piræus; but furnishes a very ample field to the virtuosi. It was filled with monuments of Athenian glory, and exhibited an amazing display of beauty, of opulence, and of art. Heliodorus, named Periegetes the guide, has employed on it fifteen books. The curiosities of various kinds, with the pictures, statues, and pieces of sculpture, were so many and so remarkable as to supply Polemo Periegetes with matter for four volumes; and Strabo affirms, that as many would be required in treating of other portions of Athens and of Attica. In particular, the number of statues was prodigious. Tiberius Nero, who was fond of images, plundered the Acropolis as well as Delphi and Olympia; yet Athens, and each of these places, had not fewer than 3000 remaining in the time of Pliny. Even Pausanias seems here to be distressed by the multiplicity of his subject. But this banquet of the senses has long been withdrawn; and is now become like the tale of a vision. The spectator views with concern the marble ruins intermixed with mean flat-roofed cottages, and extant amid rubbish; the sad memorials of a nobler people; which, however, as visible from the sea, should have introduced modern Athens to more early notice. The Acropolis has only one entrance, which fronts the Piræus. The ascent is by traverses and rude fortifications furnished with cannon, but without carriages, and neglected. By the second gate is the station of the guard. Over this gate-way is an inscription in large characters on a stone turned upside down, recording a present of a pair of gates. Going farther up, you come to the ruins of the propylæa, an edifice which graced the entrance into the citadel. No fewer than four temples were to be passed in this ascent, those of Æsculapius, Themis, Venus and Peitho, also of Tellus and Ceres. Two equestrian statues stood in front of the wings of the propylæa, supposed to represent Marcus Agrippa, and Caius Cæsar Octavianus. The propylæa was one of the structures of Pericles, who began it when Euthymenes was archon, 435 years before Christ, and completed it in five years, at the expense of 2012 talents. It was of marble of the Doric order, and had five doors, to afford an easy passage to the multitudes which resorted on business or devotion to the Acropolis Six fluted Doric columns raised on four steps, supported the central pediment, each five feet in diameter, twenty-nine in height, and seven in their intercolumniation, except between the two central columns, where was a space of thirteen feet, for the admission of carriages. Behind was a vestibule forty-three feet in depth, sustained by a double row of six Ionic columns, three and a half feet diameter, and thirty-four in height, three of which were placed on each side, whilst marble beams depending on the lateral walls and columns, supported a painted ceiling of exquisite workmanship. The doors contiguous to the frontage, opened into a portico of the depth of eighteen feet, upon a level of five steps ascent, from which a single step descended to the platform of the Acropolis. The middle door occupied the whole space between the central columns. The next door on each side was of inferior dimensions, and the two extreme doors proportionally smaller. The portico itself consisted of a large square room roofed with slabs of marble which were laid on two great marble beams, and sustained by four beautiful columns. These were Ionic, the proportions of that order best suiting the purpose as taller than the Doric. The roof which so exquisitely embellished the building, after standing above 2000 years, was with all the pediments destroyed in 1687 by the Venetian siege. The right wing of the propylæa is said to have been a temple of Victory. The Athenians related that Ægeus stood there, viewing the sea, anxious for the return of his son Theseus from Crete, and precipitated himself at the sight of the black sails. The idol was named Victory without wings, because the news of the success of Theseus did not arrive but with the conqueror. It had a pomegranate in the right hand, and an helmet in the left. As the statue was without pinions, it was hoped the goddess would remain for ever on the spot. On the left wing of the Propylæa, and fronting the temple of Victory, was a building decorated with paintings by Polygnotus, of which an account is given by Pausanias. This edifice, as well as the temple, was of the Doric order, the columns fluted, and without bases. Both contributed alike to the uniformity and grandeur of the design; and the whole fabric, when finished, was deemed equally magnificent and ornamental. Its roof of white marble, was unsurpassed both in the size of the stones, and in the beauty of their arrangement On the northern side of the Acropolis within the propylæa, stood the celebrated statue of Mi nerva Promachus, executed by Phidias after the battle of Marathon. Its height together with the pedestal exceeded seventy feet, rising considerably above the summit of the parthenon; the crest of the helmet and point of the spear being seen out at sea, by persons sailing from Servium towards Athens; and a brazen quadriga stood near the statue in commemoration of the victory of the Athenians over the Bœtians and the Chalcidenses. See HER. v. 79.

The propylæa, according to the Greek historians, took five years in building, and was formed after the designs of Mnesicles. It was completed 437 years B.C. and was estimated by Heliodorus, as cited by Harpocration, at 2012 talents, or £452,700 sterling, and was the most expensive of all the works of Pericles.

PARTHENON.—But the chief glory of the Acropolis is said to have been the Parthenon, or temple of Minerva, so elevated that the pavement of its peristyle was on a level with the capitals of the eastern portico of the propylæa. It was a peripteral octostyle of the Doric order, with seventeen columns on the sides, each six feet two inches in diameter at the base, and thirty-four feet in height, elevated on three steps. Within the peristyle, at each end stood six columns of 5¼ feet diameter, forming a vestibule to the cell which rose two steps from the peristyle level. The cell itself contained two chambers of sixty-two feet six inches in width, and of lengths differing from forty-three feet ten inches, to ninety-eight feet seven inches, the roof of the former being supported by four columns of four feet diameter, and of the latter by sixteen of three feet diameter. The height of the temple from the base to the pediment being fifty-six feet, and the dimensions of the area 228 feet, by 102. The pediment contained two compositions of about eighty feet in length, each containing upwards of twenty colossal statues, in two groups, the first representing the birth of the goddess Minerva, and the second her contest with Neptune, for the government of Attica. The figures of the western pediment enumerating them from the left were Cecrops, Aglaurus, Theseus, Hebe, Eresichthon, Pandrosus, Victory without wings drawn in a Biga by two horses, Erechtheus, Minerva and Jupiter in the centre, and to the right, Neptune, Thalassa, Latona, Mercury, Maïa, Vesta, Mars and Venus. The figures which occupied the eastern pediment have never been perfectly ascertained. Some of them, however, were Hyperion, Hercules, Venus, Iris, Peitho, Vesta, Proserpine, Victory with wings, Ceres, and the car of Night. The frieze advancing in two parallel columns from west to east, was sculptured on both sides, and contained a representation of the Panathenaic procession. Six seated figures of deities also represented the head of each column, while the central group represented the presentation of the peplus to the second archon. Of the ninety-two metopes which anciently adorned the frieze of the peristyle, these on the south side, some of which are now in the British Museum, contained each a centaur, and hence those only of the eastern side have been assigned to the actions of Minerva; those of the western to some other point of Athenian history, the subject of which has been lost; those of the northern to the Amazonian war; those of the southern to the war with the Centaurs. A chryselephantine statue of Minerva stood in the Opis, thodomos thirty-nine feet in height, the buskins sculptured with the battle of the Centaurs, and the Ægis which lay at her feet containing a representation of the battle of the Amazons on the outside, and on the inside that of the Titans. Ictinus is said to have been the architect of this temple; Phidias the artist; and the entire cost one million and a half sterling. The remains of this beautiful specimen of ancient architecture have been described by Dr. Chandler, a few extracts from whose observations we shall subjoin. 'The chief ornament,' he observes, 'of the Acropolis was the Parthenon or great temple of Minerva, a most superb and magnificent fabric. The Persians had burned the edifice, which before occupied the site, and was called hecatompedon, from its being 100 feet square. The zeal of Pericles and of all the Athenians was exerted in providing a far more ample and glorious residence for their favorite goddess. The architects were Callicrates and Ictinus; it was of white marble, of the Doric order, the columns fluted and without bases, the number in front eight; and adorned with admirable sculpture. The story of the birth of Minerva was carved in the front pediment; and in the back, the contest with Neptune for the country. The statue of Minerva, made for this temple by Phidias, was of ivory, twenty-six cubits or thirty-nine feet high. It was decked with pure gold to the amount of forty-four talents, so disposed by the advice of Pericles as to be taken off and weighed, if required. This image was placed in the temple in the first year of the eighty-seventh Olympiad, in which the Peloponnesian war began. The gold was stripped off by the tyrant Lachares, when Demetrius Poliorcetes compelled him to fly. The same plunderer plucked down the golden shields in the Acropolis, and carried away the golden Victories, with the precious vessels and ornaments provided for the Panathenæan festival. The Parthenon remained entire for many ages after it was deprived of the goddess. The Christians converted it into a church, and the Mahommedans into a mosque. It is mentioned in the letters of Crusius, and miscalled the Pantheon, and the temple of the unknown God. The Venetians under Koningsmark, when they besieged the acropolis in 1687, threw a bomb, which demolished the roof, and setting fire to some powder, did much damage to the fabric. The floor, which is indented, still witnesses the place of its fall. This was the sad forerunner of farther destruction; the Turks breaking the stones, and applying them to the building of a new mosque, which stands within the ruin, or to the repairing of their houses and the walls of the fortress. The vast pile of ponderous materials, which lay ready, is greatly diminished; and the whole structure will gradually be consumed and disappear. The temple of Minerva in 1676 was, as Wheeler and Spon assert, the finest mosque in the world, without comparison. The Greeks had adapted the fabric to their ceremonial by constructing at one end a icircular recess for the holy tables, with a dow: for before it was enlightened only by door, obscurity being preferred under the then ritual, except on festivals, when it ded to splendid illuminations; the reason, it been surmised, why temples are commonly nd simple and unadorned on the insides. In wall beneath the window were inserted two ces of the stone called phengites, a species of rble discovered in Cappadocia in the time of ro; and so transparent that he erected with it mple to Fortune, which was luminous within, en the door was shut. These pieces were forated, and the light which entered was ged with a reddish or yellowish hue. The ture of the Panagia or Virgin Mary, in Mo- c, on the ceiling of the recess, remained; h two jasper columns belonging to the screen, ich had separated that part from the nave; d within, a canopy supported by four pillars porphyry, with Corinthian capitals of white rble, under which the table had been placed; d behind it, beneath the window, a marble air for the archbishop; and also a pulpit, nding on four small pillars in the middle aisle. he Turks had white-washed the walls, to obli- rate the portraits of saints, and the other paint- gs with which the Greeks decorate their places worship; and had erected a pulpit on the ght hand for the iman or reader. The roof was posed in square compartments; the stones ssive; and some had fallen in. It had been stained in the Pronaos by six columns; but e place of one was then supplied by a large ile of rude masonry, the Turks not having been ble to fill up the gap more worthily. The roof f the naos was supported by colonnades ranging ith the door, and on each side; consisting of enty-two pillars below, and of twenty-three bove. The odd one was over the entrance, hich by that disposition was left wide and un- mbarrassed. In the portico were suspended a w lamps, to be used in the mosque at the asons when the Mussulmans assemble before y-break, or to be lighted up round the mi- ret, as is the custom during the Ramazan or ent. It is not easy to conceive a more striking bject than the Parthenon, though now a mere in. The columns within the naos have all en removed: but on the floor may be seen the rcles which directed the workmen in placing em; and at the farther end is a groove across , as for one of the partitions of the cell. The ross erected by the Christians is demolished; nd from the rubbish of the ceiling, the Turkish oys collect bits of the Mosaic, of different colors, hich composed the picture. We are told at myrna, that this substance had taken a polish, nd been set in buckles. This cell is about half molished; and in the columns which surround , is a large gap near the middle. On the walls e some traces of the paintings. Before the rtico is a reservoir sunk in the rock, to supply e Turks with water for the purifications custo- ary on entering their mosques. In it, on the ft hand, is the rubbish of the pile erected to pply the place of a column; and on the right staircase which leads out on the architrave, and s a marble or two with inscriptions, but worn so as not to be legible. It belonged to the minaret, which has been destroyed. The travellers, to whom we are indebted for an account of the mosque, have likewise given a description of the sculpture then remaining in the front. In the middle of the pediment was seen a bearded Jupiter, with a majestic countenance, standing, and naked; the right arm broken. The thunderbolt, it has been supposed, was placed in that hand, and the eagle between his feet. On his right was a figure, it is conjectured, of Victory, clothed to the mid-leg; the head and arms gone. This was leading on the horses of a car, in which Minerva sat, young and unarmed; her head-dress, instead of a helmet, resembling that of a Venus. The generous ardor and lively spirit visible in this pair of celestial steeds, was such as bespoke the hand of a master, bold and delicate, of a Phidias or Praxiteles. Behind Minerva was a female figure, without a head, sitting, with an infant in her lap; and in this angle of the pediment was the emperor Hadrian with his arm round Sabina, both reclining, and seeming to regard Minerva with pleasure. On the left side of Jupiter were five or six other trunks to complete the assembly of deities into which he received her. These figures were all wonderfully carved, and appeared as big as life. Hadrian and his consort, it is likely, were complimented by the Athenians with places among the marble gods in the pediment, as benefactors. Both of them may be considered as intruders on the original company; and possibly their heads were placed on trunks, which before had other owners. They still possess their corner, and are easy to be recognised, though not unimpaired. The rest of the statues are defaced, removed, or fallen. Morosini was ambitious to enrich Venice with the spoils of Athens; and by an attempt to take down the principal group, hastened their ruin. In the other pediment is a head or two of sea-horses finely executed, with some mutilated figures; and on the architrave beneath them are marks of the fixtures of votive offerings, perhaps of the golden shields, or of festoons suspended on solemn occasions, when the temple was dressed out to receive the votaries of the goddess.'

ERECHTHEIUM.—The erechtheium, about 160 feet north of the parthenon, containing the united temples of Minerva, Polias Pandrosus, or, according to some writers, Neptune, was of irregular figure, the eastern front of which presented a hexastyle Ionic colonnade, the western being pseudo-peripteral, and the entablature supported by half columns. Two deities are supposed to have inhabited two great divisions in the interior. The Pandrosseium (according to some) on the western side, opened into porticoes to the north and south; the former being tetrastyle, and the latter supported by six caryatides. This beautiful edifice was small, the entire area not exceeding sixty-three feet by thirty-six, nor the height twenty. Here was preserved the mark of Neptune's trident, which struck when the horse issued forth; also the olive-tree of Minerva; an image of the goddess which fell from heaven, before which was suspended a golden lamp, the wick of which, being Carpathian flax, never consumed, and required oil but once a year; together with a brazen palm-tree above it, which carried off the smoke; the wooden Hermes presented by Cecrops; the chair by Dædalus; the scimitar of Mardonius; the breastplate of Masistrus, who commanded the Median cavalry at Platæa; and numerous groups of statues.

As Dr. Chandler's description of this celebrated depository of arts, at the time of his visit, is highly interesting, we shall again refer the reader to that authority. 'Neptune and Minerva,' observes the Dr. 'once rival deities, were joint and amicable tenants of the Erechtheium, in which was an altar of Oblivion. The building was double, a partition wall dividing it into two temples, which fronted different ways. One was the temple of Neptune Erechtheus, the other of Minerva Polias. The latter was entered by a square portico connected with the marble skreen, which fronts towards the propylæa. The door of the cell was on the left hand; and at the further end of the passage was a door, leading down into the Pandroseum, which was contiguous. Before the temple of Neptune Erectheus, was an altar of Jupiter the supreme, on which no living thing was sacrificed, but they offered cakes without wine. Within it was the altar of Neptune Erectheus; and two, belonging to Vulcan, and a hero named Butes, who had transmitted the priesthood to his posterity, which were called Butadæ. On the walls were painting of this illustrious family, from which the priestess of Minerva Polias was also taken. It was asserted, that Neptune had ordained the well of salt water, and the figure of a trident in the rock, to be memorials of his contending for the country. The former, Pausanias remarks, was no great wonder, for other wells of a similar nature, were found inland; but this, when the south wind blew, afforded the sound of waves. The temple of Minerva Polias was dedicated by all Attica, and possessed the most ancient statue of the goddess. This temple was burned when Callias was Archon, twenty-four years after the death of Pericles. Near it was the tomb of Cecrops, and within it Erectheus was buried. The ruin of the Erectheum is of white marble; the architectural ornaments of very exquisite workmanship, and uncommonly curious. The columns of the front of the temple of Neptune are standing with the architrave; and also the skreen and portico of Minerva Polias, with a portion of the cell, retaining traces of the partition wall. The order is Ionic. An edifice revered by ancient Attica, as holy in the highest degree, was, in 1676, the dwelling of a Turkish family, and is now deserted and neglected; but many ponderous stones and rubbish must be removed before the well and trident would appear. The former, at least, might probably be discovered. The portico is used as a powder magazine; but we obtained permission to dig and to examine the outside. The doorway of the vestibule is walled up, and the soil risen nearly to the top of the door-way of the Pandroseum. By the portico is a battery commanding the town, from which ascends an amusing hum. The Turks fire from it, to give notice of the commencement of Ramazan, or of their Lent, and of Bairam, or the holy days.'

Schools, Gymnasia, &c.—The schools and places of public instruction of Athens during her prosperity were several: the most celebrated were two called Ceramicus; one within the city, containing a multitude of buildings of all sorts; the other in the suburbs, in which was the academy and other edifices. There were many gymnasia in Athens; the most remarkable were the Lyceum, Academia, and Cynosarges. The Lyceum stood on the banks of Ilissus; some say it was built by Pisistratus, others by Pericles, others by Lycurgus. Here Aristotle taught philosophy, instructing such as came to hear him as they walked, whence his disciples derived the name of Peripatetics. It was also the place where the Polemarch kept his court, and the chief gymnasium of the Athenian youth. The ceramicus without the city was six stadia from its walls. The academy made part thereof. It was a marshy unwholesome place till Cimon got it drained, and then it became extremely pleasant and delightful, being adorned with shady walks, where Plato read his lectures, and from thence his scholars were styled Academics. The Cynosarges, sacred to Hercules, and commonly considered as the position occupied by the Athenians after the battle of Marathon, when the Persians sailed to Phalerum, was a place in the suburbs not far from the Lyceum; it was famous on many accounts, but particularly for a noble gymnasium erected there, appointed for the special use of such as were Athenians only by one side. Themistocles got much ill-will by carrying many of the nobility to exercise with him here, because, being but of the half-blood he could exercise nowhere else but in this gymnasium. Antisthenes instituted a sect of philosophers, who from the name of this district, as many think, were styled Cynics.

Of the walls of the acropolis the southern is called the Cimonian and the northern the Pelasgic; both commonly attributed to Cimon and Themistocles. A few rude fragments of the ancient Hecatompedum are still remaining in the latter, of Doric architecture, supposed to be the workmanship of the original Pelasgi, who first fortified the citadel anterior to the invasion of the Persians. On the northern side of the Propylæa is still to be seen an ancient grotto, consecrated to Apollo and Pan, in which the former received the favors of Creusa, daughter of Erectheus. It was descended by a flight of steps.

The other remarkable places and erections are the Stadium, south of the Lyceum, constructed by Lycurgus for the contest of the panathenaic festival, 350 B. C., and afterwards covered with marble by Herodes Atticus. It measured 675 feet by 130, and was capable of accommodating upwards of 25,000 persons. The temple of the Eumenides stood upon the hill Colonos, sacred to Neptune, and celebrated in the history of Œdipus. It was about a mile and a quarter north of the walls, and between it and the city lay the sepulchral plain. To the east rises a hill, supposed to be the mount Anchesmus of the ancients, and at present one of the most remarkable features of modern Athens, occupied by the church of St. George.

Remains of the Temple of Jupiter Olympius.—The ruins of the temple of Jupiter Olym-

s and several other remarkable antiquities are
s described by the celebrated gentleman to
m we have already referred. 'The ruin of
temple of Jupiter Olympius,' says he, 'con-
s of prodigious columns, tall and beautiful,
the Corinthian order, fluted; some single,
e supporting their architraves; with a few
ssive marbles beneath; the remnant of a vast
p, which only many ages could have con-
ned and reduced into so scanty a compass.
e columns are of very extraordinary dimen-
ns, being about six feet in diameter, and nearly
ty in height. The number, without the cell,
s 116 or 120. Seventeen were standing in
'6; but, a few years before we arrived, one
s overturned with much difficulty, and ap-
d to the building a new mosque in the bazar
narket-place. This violence was avenged by
bashaw of Negropont, who made it a pretext
extorting from the vaiwode, or governor, fifteen
ses; the pillar being, he alleged, the pro-
y of their master, the grand seignior. It
an angular column and of consequence in
rmining the dimensions of the fabric. We
etted that the fall of this mighty mass had
been postponed until we came, as it would
e afforded an opportunity of inspecting and
suring some members which we found far
lofty to be attempted. On a piece of the
hitrave, supported by a couple of columns,
two parallel walls of modern masonry, arched
at the middle, and again near the top. You
told it has been the habitation of a hermit,
btless of a Stylites; but of whatever building
as been part, and for whatever purpose de-
ned, it must have been erected thus high in
while the immense ruin of this huge struc-
e was yet scarcely diminished, and the heap
lined so as to render it accessible. It was re-
rked that two stones in a step in the front had
lesced at the extremity, so that no juncture
ld be perceived; and the like was discovered
o in a step of the Parthenon. In both in-
nces it may be attributed to a concretory fluid,
ich pervades the marble in the quarry. Some
tion remaining in the pieces when taken
m, as it were, and placed in mutual contact,
unded and united them by a process similar
that in a bone of an animal when broken and
operly set. Besides the more stable antiqui-
s, many detatched pieces are found in the
n, by the fountains, in the streets, the walls,
houses, and churches. Among these are
ments of sculpture, a marble chair or two,
ich probably belonged to the gymnasia or
atres; a sun-dial at the catholicon, or cathe-
l, inscribed with the name of the maker; and,
the archiepiscopal house close by, a very cu-
us vessel of marble, used as a cistern to re-
ve water, but once serving, it is likely, as a
lic standard or measure. Many columns
ur with some maimed statues and pedestals,
eral with inscriptions, and almost buried in
th. A custom has prevailed, as at Chios, of
ng in the wall, over the gateways and doors
the houses, carved stones, most of which ex-
it the funeral supper. In the courts of the
ses lie many round stelæ or pillars, once
ed on the graves of the Athenians; and a great number are still to be seen applied to the same use in the Turkish burying-grounds before the acropolis. These generally have concise inscriptions containing the name of the person, and of the town and tribe to which the deceased belonged. Another species, which resembles our modern head-stones, is sometimes adorned with sculpture, and has an epitaph in verse. We saw a few mutilated hermæ. These were busts on long quadrangular bases, the heads frequently of brass invented by the Athenians. At first they were made to represent only Hermes or Mercury, and designed as guardians of the sepulchres in which they were lodged, but afterwards the houses, streets, and porticoes of Athens, were adorned with them, and rendered venerable by a multitude of portraits of illustrious men and women, of heroes, and of gods; and it is related that Hipparchus, son of Pisistratus, erected them in demi or borough towns, and by the road side, inscribed with moral apophthegms in elegiac verse; thus making them vehicles of instruction.'

Decline of Athens.—The decline of Athens, one of the most remarkable subjects of history, was occasioned by that great revolution which took place in the moral world upon the propagation of Christianity and the consequent annihilation of those idolatrous superstitions which had been handed down from the ages bordering on the deluge. The general conduct of the early Christians, wherever their influence extended, was to destroy all works of pagan architecture dedicated to the purposes of superstition, whilst, by propagating the gospel and thoroughly extinguishing the principles that gave birth to them, no hope remained of their reproduction. At Athens, however, the early Byzantine emperors forbore to destroy these sacred edifices, and in lieu of it consecrated them to the Christian cause. Even Alaric used every effort for the preservation of Athens, and the noble statue of Minerva Promachus still crowned the city and towered above the uninjured Parthenon at the close of the fourth century. During the ducal government of the Franks, however, the city dwindled to the rank of a provincial town, and in 1436 Omar took possession of it in the name of Mahomet. This was shortly followed by the ruin of the city and the demolition of those stupendous works of art which had been the wonder of so many ages.

Venetian Invasion.—In 1687 the Venetians, as already intimated, under count Koningsmark, a Swede, besieged the acropolis. The explosion of the beautiful temple of Victory without wings, (νικη απτερος) the frieze of which is now in the British Museum, followed the bombardment; an explosion of the Parthenon followed; the eastern wall and statues of that pediment were thrown to the ground; the middle of the temple was destroyed; the western front considerably shaken, and little less except part of the opisthodomos and a few of the lateral columns of the peristyle adjoining the cell were left standing. These two celebrated temples, which had been used by the Turks as powder-magazines, constituted the chief glory of Athens, and after the destruction of these she surrendered. During the short time the Venetians held possession of the city several ancient monuments were destroyed. A celebrated car of Victory, which stood on the western pediment of the Parthenon, with horses of a natural size, was taken down by the Doge Morosini, with a view of being removed to Venice, but in lowering it to the ground the engineers suffered it to fall, by which it was entirely destroyed.

KNOWLEDGE OF ATHENIAN ANTIQUITIES IN EUROPE.—The antiquities and works of Athens were little noticed in Europe till the close of the 17th century. The accounts received by means of travellers had been mostly perplexed and mistaken. Some called the Parthenon the pantheon, and described it to be oval, others thought it the temple of the unknown God, mentioned in the narrative of the apostle Paul. Sir G. Wheeler, and Dr. Spon, who visited Athens before the Venetian siege, were the first who by their description of the city impressed European nations with the great value of these celebrated remains. The Dillettanti society employed Dr. Chandler, already quoted, to visit this famous depository of the sciences, and examine its antiquities and topography. Mr. Stuart, an ingenious artist, also went over from England, and employed three years in studying and forming correct drawings of its principal remains.

LAUDABLE EFFORTS OF LORD ELGIN.—Lord Elgin, on his appointment as ambassador to the Porte in 1799, established a society of distinguished artists in Athens, who in three years presented him with a complete body of finished drawings of the plans and details of the most important monuments and remains, accompanied by just admeasurements of the elevation and extent, besides bas reliefs and characteristic features of Athenian architecture, moulded from the originals, in which they were the more diligent, as the Turks from motives of avarice were in the habit of breaking up marbles, in the hope of finding some hidden treasure under them, and of defacing the most perfect sculptures from motives of superstition. The British ambassador, who appears to have been a man of taste and genius, employed his interest at the Porte in obtaining permission to remove some of the most valuable marbles, and transfer them to England, the French having removed some valuable deposits to the gallery of the Louvre.

LORD ELGIN'S COLLECTION OF ANTIQUITIES, &c.—Lord Elgin's collection consisted chiefly of the following articles: Several original Metopes from the interior frieze of the Parthenon, descriptive of the combat between the Centaurs and the Lapithæ; part of the outer frieze of the same temple, representing the procession at the Panathenaic festival, both of which occupied the pediments of the eastern and western fronts, the former being in such high relief as to seem groups of statues. Several inscriptions after the Kionedon manner, in which singular care is taken to preserve an equal number of letters in each line, occasionally even to the division of monosyllables. A Doric capital, assizes of the columns, a triglyph, some of the modules of the cornice, and a few of the marble tiles (antefixa,) which roofed the original ambulatory. Models of the metopes in the temple of Theseus, containing the labors of Theseus and Hercules, taken from the interior frieze, representing the battle of the Centaurs and Lapithæ; together with several incidents of the battle of Marathon. The temple being in a considerable state of preservation, the originals could not be obtained. In addition to these he obtained from the vestibule of the temple of Neptune, and that of Minerva Polias, in the Erechtheium, a capital, a base, and some original blocks of the frieze and cornice, with plans of the architecture, &c. From the adjoining Pandroseium, one of the Caryatides. From the temple of the bearded Bacchus, a statue of the god, and a sun-dial, said to have existed in the time of the tragedians. The convents and other buildings furnished bronzes, cameos, intaglios, and medals. Besides the above laudable undertakings, he traced the walls of the city, made extensive excavations, and, from the numerous tumuli which opened in the suburbs, formed a magnificent collection of the vases hitherto improperly denominated Etruscan. But perhaps one of his most successful efforts was the removing of the celebrated Boustrophedon inscription, which anciently adorned the Sigean promontory. This celebrated monument had for some time formed a seat at the door of a Greek chapel, and was the resort of persons afflicted with the ague; the letters having been nearly obliterated by the numbers of patients who had reclined upon it. The most valuable part of his collection has been thought by some to be a complete series of Doric, Ionic, and Corinthian capitals, from the birth of Athenian architecture to its greatest height under Pericles. The same gentleman obtained some fragments of the temple of Victory without wings, on the right of the propylæa, representing scenes from the battles of Marathon, Salamis, and Platæa, which had been built in the wall of a powder magazine; the finest blocks of the whole being placed in an inverted position. These and some other sculptures were afterwards embarked for England, but unhappily wrecked off the island of Cerigo. Many cases however by the assistance of the most expert divers were obtained from the vessel, at the depth of twenty fathoms of water, and the remainder, although two successive winters of laborious exertion were employed about them, were left upon the wreck. On the acquisition of so numerous a collection of remains from the most valuable part of Athenian antiquity, the British ambassador conceived the idea of engaging the most distinguished of the modern artists, to attempt their restoration. but they declined the task. Canova, in particular, affirmed that the marbles of the ancient parthenon had never been retouched, and were so superior in their style of execution, that it would be sacrilege for any man to presume to violate them with a chisel. They were therefore transported to England as Athenian originals, and purchased by a £35,000 grant of Parliament, to enrich the British Museum, where they still remain to guide the improvements of taste, and excite the emulation of modern genius.

PRESENT STATE OF ATHENS.—The present state of Athens, like that of most other celebrad cities of antiquity, exhibits a remarkable ectacle of fallen greatness. The Acropolis s converted into a Turkish fortress, and placed der the government of a waywode, or lieutent, who is chief black eunuch of the seraglio. he town is surrounded by an insignificant wall, out ten feet in height, far short of the dimenon of its ancient circumference. The streets e narrow. The population is diminished to e-tenth of its number in the time of Desthenes, said to have been 116,000. The Acrolis is disfigured by a huge Venetian tower, erected when under the dominion of that republic, the architecture of which looks the more barbarous, from the highly finished models that surround it. The parthenon is degraded in the front by a mean house, in which resides the disdar, or governor of the fortress, and the south-east angle exhibits a wretched mosque. The town is chiefly inhabited by Turks and Christians of the Greek church. It is the see of an archbishop, under whom five archons and a number of secretaries are appointed to the management of its ecclesiastical concerns.

Athens, a flourishing post town of New York, the west bank of the Hudson, opposite Hudn city. The situation of this place is pleasant, d very eligible for trade. It contains a Lueran church, three school-houses, and a mart-house, an extensive rope-walk, a large dislery, a pottery of stoneware, and other smaller anufactories. Population 1000. Twenty-eight iles south of Albany.

ATHERINA, in ichthyology, a genus of fishes the order of abdominales. The characters of is genus are these:—the upper jaw plain; the ays of the branchiostege membrane are six; and e side belt or line shines like silver. The species are two, viz.

1. A. hepsetus, the smelt, with about twelve rays in the fin next the anus. It is found in the Mediterranean, and is also very common in the sea near Southampton. The highest season is from March to the beginning of June; in which month it spawns. It is also found on other [illegible] of our island.

2. A. menidea, has twenty-four rays in the fin near the anus. This is a very pellucid fish, with many black points interspersed; it has many teeth in the lips, but none in the tongue or jaws. It is found in the fresh waters of Carolina, and spawns in April.

ATHERINOIDES, a species of clupea, distinguished by a silvery lateral line. In the dorsal fin are twelve rays; fourteen in the pectoral fins; eight in the ventral fins; thirty-two in the anal fin; and eighteen in the tail. It is a native of Surinam.

ATHERIX, in entomology, a genus of the order diptera, and family rhagionidæ. Its generic characters are antennæ moniliform; the third joint not ringed, but terminated by a seta, the palpi erect. The only known species is maculatus, found in the woods of Great Britain.

ATHEROMA, a kind of tumor, occurring chiefly in the neck and arm-holes, and containing matter resembling *αθηρα*, or pap, intermixed with hard and stony particles. These tumors are easily cured by incision.

ATHESIS, in ancient geography, a river of Cisalpine Gaul, which, rising in the Rhætian Alps, runs southward, and washes Tridentum and Verona, which last it divides; and afterwards bends its course eastward, and falls into the Adriatic, between Fossa Claudia and Philistina. It separated the country of the Euganei from that of the Veneti. It is now called the Adige.

ATHIAS (Joseph), a learned Jewish printer in the seventeenth century. He resided at Amsterdam, where, in 1667, he published a Hebrew bible, which is held in great estimation. He likewise printed the bible in Spanish, German, and English. The States presented him with a gold medal and chain, as a mark of the value they put upon his labors.

ATHIRST. On thirst. See Thirst.

> With scanty measure then supply their food;
> And, when *athirst*, restrain 'em from the flood.
> *Dryden.*

> Unnumbered suppliants crowd Preferment's gate,
> *Athirst* for wealth, and burning to be great;
> Delusive Fortune hears the incessant call,
> They mount, they shine, evaporate, and fall.
> *Johnson.*

ATHLETÆ, Αφλητης, Gr. from *αθλος*, a combat; in antiquity, persons of strength and agility, disciplined to perform in the public games. Under Athletæ were comprehended wrestlers, boxers, runners, leapers, throwers of the disk, and those practised in other exercises, exhibited in the Olympic and Pythian games, &c. for the conquerors in which there were established prizes. To obtain a firm, bulky, weighty body, by force of which they frequently overpowered their antagonist, they fed altogether on dry, solid, and viscous meats. In the earlier times their chief food was dry figs and cheese, which was called arida saginatio, *ξερα τροφη*. Oribasius first brought this in disuse, and substituted flesh instead of these. They had a peculiar bread, called *κολητια*: they exercised, eat, and drank, without ceasing; were not allowed to leave off eating when satiated, but were obliged to cram on till they could hold no more; by which means they at length acquired a degree of voracity, which to us seems incredible, and a strength proportional. Pausanias relates of Milo, the Crotonian, that he carried a bull on his back a considerable way, then knocked him down with a blow of his fist, and, lastly, devoured him at a meal!

ATH'LETE, } Αθλητης, a wrestler in the
Ath'letick. } agonistic exercises of the Greeks; from *αθλος*, labor. One whose physical powers enable him to labor, struggle, contend.

> And health itself, if it be *athletic*, may by its very excess become dangerous. *Bp. J. Taylor.*

> Science distinguishes a man of honour, from one of those *athletic* brutes, whom undeservedly we call heroes. *Dryden.*

> Was he [the wise man] in adversity; he equally returned thanks to the director of this spectacle of

human life, for having opposed to him a vigorous *athlete*, over whom, though the contest was likely to be more violent, the victory was more glorious and equally certain. *Smith's Moral Sentiments.*

ATHLON, Gr. Αθλον, in antiquity, the prize adjudged to the victor, in the athletic exercises, at the public games.

ATHLONE, a town of Ireland, pleasantly situated on both sides of the Shannon; the one half lying in the county of Westmeath, and the other in that of Roscommon. These divisions of the town are united by a well built bridge, in the middle of which stands a monument, on which there are some badly executed figures and inscriptions, celebrating the success of Queen Elizabeth of England, and relating how the rebels in her reign were executed, quartered, and their skulls, &c. stuck upon poles, about the country, and at Dublin castle; and every thing brought into a state of the greatest prosperity. Athlone, though so advantageously situated for trade, still remains a poor, ruinous, neglected, dirty place. The castle was founded by king John, on some land belonging to St. Peter's abbey, for which he granted a compensation. It is built on a high raised round hill, resembling one of the Danish forts. It had formerly two convents, and was strongly fortified. In 1691 part of the English army under General Ginckle, although the Irish were strongly entrenched on the opposite shore, forded the river, stormed and took possession of the town, not losing more than fifty men in the attack; which is esteemed as bold an enterprise as any recorded in history. General Ginckle obtained the title of Earl of Athlone, as a reward for his services. There are generally two troops of horse, and four companies of foot, quartered at Athlone. Athlone is fifty-nine miles west from Dublin. This place returns one member to parliament.

ATHLOTHETA, in antiquity, an officer appointed to superintend the public games, and adjudge the prizes. The athlotheta was otherwise called æsymneta, brabeuta, &c.

ATHNACH, the name of one of the principal of the Hebrew accents, which serves not only to regulate the voice, but to distinguish the members of a sentence, whence its name athnach, i. e. respiration. On this account it is called king and pause, and answers to our colon, and sometimes to a note of interrogation. It is marked under a letter thus (‸).

ATHOL, or ATHOLL, the most northern district of Perthshire in Scotland, extending in length forty-three miles, and in breadth thirty. The country is very rough and mountainous, and contains part of the ancient Caledonian forest: but these mountains are interspersed with fruitful valleys. It has several villages, but no town of any consideration. The most noted place is Blair castle, which belongs to the duke of Atholl, who derives his title from this district. In the neighbourhood is the pass of Killicranky, rendered memorable by the battle fought there, in the beginning of king William's reign, between general M'Kay, and the Highlanders adhering to king James.

ATHOS, a mountain of Chalcidia in Macedonia, celebrated in ancient and modern times. The ancients entertained extravagant notions concerning its height; and it was a received opinion, that the summit of mount Athos was above the middle region of the air, and that it never rained upon it. Its modern name of Monte Santo (Holy Mount) it has got from the number of Greek monasteries that are built on it. They amount to nearly thirty, are protected by fortifications from the incursions of the corsairs, and are inhabited by about 6000 monks, who lead a life of monotony and indolence. The air is remarkably pure, and many of the inhabitants reach a great age. About half-way up the hill lies a small town, called Kareis, which is also fortified, and is the seat of the Turkish aga. A market is held here every Saturday, from which females are excluded. They pay an annual tribute for protection to the Turkish government. The manuscripts in their libraries have been recently examined, and some account of them will be found in Dr. Clarke's Travels. According to the accounts of modern travellers, this mountain advances into the Archipelago, on the south of the Gulf of Contessa, and is joined to the continent by an isthmus about half a league in breadth. It is about thirty miles in circumference, and two in perpendicular height. It abounds with many different kinds of plants and trees, particularly the pine and fir. In the valleys grows a plant called elegia, whose branches serve to make pens for writing. Through this mountain, or rather through the isthmus behind it, Xerxes, king of Persia, is said to have cut a passage for his fleet when about to invade Greece. In this work he spent three whole years, and employed in it all the forces on board the fleet. He is also said, before the work was begun, to have written the following ridiculous letter to the mountain: 'Athos, thou proud and aspiring mountain, that liftest up thy head to the very skies, I advise thee not to be so audacious, as to put rocks and stones, that cannot be cut, in the way of my workmen! If thou makest that opposition, I will cut thee entirely down, and throw thee headlong into the sea!' The directors of this enterprise are said to have been Bubaris, the son of Megabyzus, and Artacheus, the son of Arbeus, both Persians; but, as no traces of such a great work remain, the truth of the whole relation has been questioned. Dinocrates, a sculptor, who followed the march of Alexander, offered to convert mount Athos into a statue of that king, holding a town in his right hand, and in his left a basin large enough to contain all the waters that flowed from it; but the proposal was deemed too extravagant to be accepted. This venerable mountain constitutes one entire chain, extending seven miles in length, and three in breadth, and is situated about seventy miles east of Salonichi, the ancient Thessalonica.

ATHULIA, in entomology, a very small species of papilio, found in the northern parts of Russia. This is the papilio phœbe of Esper, and belongs to the family satyri in the Fabrician system.

ATHWART, *prep.* & *adj.* From to thwart. Across; in a transverse direction; figuratively, wrong, in a vexatious manner.

the classic page thy fancy lead
al scenes, such as the Mantuan swain
e matchless harmony of song;
yself the landscape gliding swift
agination's vivid eye. *Thomson.*
dden from the bosom of the sky,
nd shapes, or glide *athwart* the dusk,
majestic on. *Id.*
h thee, my bark, I'll swiftly go,
thwart the foaming brine;
care what land thou bear'st me to,
not again to mine.
Lord Byron's Childe Harold.

T, in navigation, is synonymous with
line of the course. It is also used in
s, such as,

T-HAUSE, expresses the situation of
hen she is driven by wind or tide,
her accident across the fore part of

T-SHIPS, reaching across ships from
the other.

T THE FORE FOOT, denotes the flight
n ball from one ship across the course
to intercept the latter, and oblige her
sail, that the former may come near
examine her.

a town of Ireland, in the county of
ear the borders of Queen's county. It
on the river Barrow, on which boats
Carlow to Waterford. It is ten miles
Kildare, and thirty-two south-west of
rom which a branch of the grand canal
nd boats pass between them daily,
e whole extent. It is governed by a
two bailiffs, and a recorder; and is,
with Naas, the assizes town.

MIA, *αθυμια*, despondency; dejection
its.

R, the name by which the inhabitants
n Africa call gold-dust; from which
opeans, and especially the French,
osed the word tiber, which also signi-
dust among those who trade in that
y.

A, in ancient records, signifies utensils,
s for country business.

. On tilt. Lifted up in the attitude
also, any thing with one end lifted up,

In the city Tours
'st *atilt*, in honour of my love;
'st away the ladies' hearts from France.
Shakspeare.

To run *atilt* at men, and wield
eir naked tools in open field. *Hudibras.*

man is always *atilt*; his favours come
him. *Spectator.*

A GUACU-MUCU. See CORNUTUS CU-

, in ichthyology, a species of diodon,
ng form, beset with rounded spines.
d by Marcgrave, guamajucu antinga;
gland is known by the name of porcu-

ecies lives in the American seas, and
Cape of Good Hope. Its food consists
nd other shell-fish. The length rather
welve inches; the body is compressed
s, and bluish. This creature has the power of dilating its body, and erecting its spines at pleasure. It is usually taken in nets, but will also take bait, which is commonly the tail of a crab, fastened on the hook.

ATINIA LEX, a law passed by the tribune Atinius, which gave a tribune of the people the privileges of a senator, and the right of sitting in the senate.

ATIZOE, in the writings of ancient naturalists, a stone used in the consecration and anointing of kings. Pliny describes it to have been of a lenticular figure, and of the size of three fingers, of a bright silvery color, and of a pleasant smell. He says it was found in India, and in some other places. Agricola is of opinion it was a kind of bitumen.

ATKINS (James), bishop of Galloway, the son of Henry Atkins, sheriff of Orkney, was born at Kirkwall, educated at the university of Edinburgh, where he took the degree of A. M. and finished his studies at Oxford, under the celebrated Dr. Prideaux, about A. D. 1638. Being appointed chaplain to the Marquis of Hamilton, he was soon after presented to the church of Birsay in Orkney, where he was much esteemed. In 1650, being moderator of the presbytery, he was appointed to draw up a declaration of loyalty, in their names, and present it to the Marquis of Montrose; for which he and the whole presbytery were deposed by the general assembly, and the doctor was excommunicated for corresponding with the Marquis. The council soon after passed an act for bringing him to trial, but being privately warned by his friend, Sir Archibald Primrose, the clerk of council, he fled to Holland, where he remained till 1653, when he returned to Edinburgh, and resided in quiet obscurity till the restoration. He then accompanied Dr. Sydserf to London, and obtained the rectory of Winfrith. In 1677 he was elected bishop of Moray, and in 1680 translated to the see of Galloway, which he governed seven years, and died much respected in 1687, aged seventy-four.

ATKINS (Sir Robert), lord chief baron of the exchequer, was born in 1621, and educated at the university of Oxford, from whence he removed to the inns of court, and became eminent in the law. He was made knight of the bath, at the coronation of king Charles II. In 1662 he was appointed one of the judges of Common Pleas; in which station he continued till 1679, when foreseeing the troubles that soon after ensued, he resigned, and retired into the country. In 1689 he was made by king William lord chief baron of the exchequer; and about the same time filled the office of speaker to the house of lords. He distinguished himself by an unshaken zeal for the laws and liberties of his country; and wrote several pieces which have been collected into one volume 8vo. under the title of Parliamentary and Political Tracts.

ATLANTEAN. Possessing the strength of Atlas.

Where are the pillars, that support the skies?
What more than *Atlantean* shoulder props
Th' incumbent load? What magic, what strange art,
In fluid air these pond'rous orbs sustain?
Young's Night Thoughts, ix.

ATLANTES. See Atlas.

ATLANTIC. The Atlantic Ocean is that great basin of waters that separates Europe and Africa on the east, from America on the west, and stretches from the arctic ocean on the north to a line which joins Cape Horn and the Cape of Good Hope on the south. It is divided from the north sea, on the north-east, by the Straits of Dover, Great Britain, the isles of Faroe and Iceland. The Mediterranean with its gulfs, the Gulf of Mexico, and Hudson's and Baffin's Bay, are consequently branches of it. That part of the Atlantic, however, between Brasil and Africa, and from the nearest approximation of these countries to the southern limits, is sometimes called the Ethiopic Ocean. It has been conjectured that the vast bed of the Atlantic was formed at the time of the deluge, by the great southern ocean below the equator, rushing on the northern hemisphere. This the shape of the opposite shores has been supposed to justify, which have the exact appearance of having been formed by the action of water, the great protuberances of the one corresponding to the indentations of the other. One of the most remarkable features of the Atlantic is its currents. It partakes of the general current which flows from the poles towards the equator, and which arises from the increased evaporation in the equatorial regions, and the augmented temperature of the waters, rendering them specifically lighter than those of the ocean in higher latitudes, as well as from the increased supplies produced by the melting of the polar ice. The existence and effects of this great current are fully proved by the enormous masses of polar ice, which they convey into the more temperate regions of the ocean, and which sometimes float as low as 40° of latitude.

The coast of America, and the numerous islands with which it is flanked, intercept the general current of the Atlantic, and create what navigators call the gulf stream. This enters the Gulf of Mexico, sweeps round the shores of that Gulf, and issues with accelerated velocity towards the north, by the channel between the southern point of Florida and the Bahama Islands. It then rolls along the shore of North America, diminishing in velocity, but increasing in breadth, till it reaches the great bank of Newfoundland. There it suddenly turns towards the east and south-east, and flows with still decreasing velocity towards the shores of Europe, the Azores, and the coasts of Africa. Navigators readily distinguish it by the high temperature of its waters, their great saltness, their indigo color, and the shoals of sea-weed that cover their surface. The celebrated Dr. Franklin first caused it to be laid down on a map, and in his various voyages from America to Europe, made numerous observations on its peculiarities. Humboldt, in May 1804, observed its velocity in the twenty-seventh degree of latitude, and found it about eighty miles in twenty-four hours, though the north wind blew very strongly at the time of the observation. When it issues from the Gulf of Florida, its velocity resembles that of a torrent, and is sometimes five miles an hour, but at others not more than three. Between the nearest point of Florida and the bank of Bahama, the breadth is only fifteen leagues, but a few degrees further
is seventeen; in the parallel of Charlesto
from forty to fifty leagues in breadth;
latitude 40° 25′, this is increased to nearl
leagues. The waters of the torrid zon
thus forcibly impelled towards the no
preserve their high temperature to such a
that in latitude 40° and 41° it has been
be 22·5° of the centigrade thermometer,
of Fahrenheit; while out of the current
perature of the water was only 63·5°.
parallel of New York, the temperature
gulf stream is equal to that of the sea in
80°. When the stream reaches the
Azore island, where the breadth is abo
leagues, the waters still preserve a part
impulsion they received in the Gulf of
nearly 1000 leagues distant. Thence it p
to the Canaries and the coast of Africa,
the latitude of Cape Blanco, where the
flow towards the south-west, they ming
the current of the tropics, and recommen
tour from east to west.

Thus it appears that the waters of the
between the eleventh and forty-third
are constantly drawn by currents into a
whirlpool; and if a body floating on thes
be supposed to return precisely to the pl
which it commenced its motion, M. H
has calculated, from the known velocit
current, that it would require two years
months to complete its circuit of 3800
'A boat,' he observes, 'which may be s
to receive no impulsion from the winds
require thirteen months from the Canary
to reach the coast of Caraccas, ten m
make the tour of the Gulf of Mexico an
Tortoise shoals, opposite the port of Ha
while forty or fifty days might be suff
carry it from the Straits of Florida to the
Newfoundland. Estimating the velocity
water at seven or eight miles in twenty-fou
in their progress from this bank to the
Africa, it would require ten or eleven mo
this last distance. Such are the effects
slow but regular motion, which agitates
ters of the ocean.' A branch of this curr
dently reaches the western shores of Eu
the productions of the tropical regions of
are frequently thrown on the coasts of
brides, Scotland, and Norway.

M. Humboldt endeavoured to ascer
comparative height of the waters of thi
along its shores. In reference to the
Mexico, and the opposite side of the ist
the shores of the Pacific, he found the s
the former to be six or seven metres hig
that of the latter. The depth of the At
also extremely various; in many place
wholly beyond the power of man to
Captain Scoresby, in the Greenland sea,
plumbed to the greatest known depth
line has reached, i. e. 7200 feet. Many
the Atlantic, however, are thought to
times this depth.

The saltness and specific gravity of th
tic differ in various parts; and gradually
from the equator to the poles. In th
bourhood of the British isles, the salt

$\frac{1}{33}$rd of the weight of the water; and
npson, in his Chemistry, observes, that
experience has gone, the proportion of
ntents does not appear to differ much,
may be the latitude in which the water
ed. Captain Phipps, in north latitude
sixty fathoms under ice, found the sa-
ents of sea-water to be 0·0354; in lati-
he found them to be 0·036; in latitude
4. Pages found sea-water, taken up in
itude 45° and 39°, to contain 0·04 of
ntents; and Baumè, obtained by analy-
water taken up by Pages, in north lati-
and 14°, exactly the same proportion of
atter. In southern latitudes, Pages
e following proportions of saline con-
:

Sal. Matter	Latitude	Sal. Mat.
. 0·0416 . .	25° 54′ .	0·04
. 0·045 . .	20 00 .	0·039
. 0·040 . .	1 16 .	0·035

ecific gravity of the water is greatest
e saline ingredients contained are the
ndant; as it is the mixture of these with
water that increases its weight.

ter of the Atlantic ocean is warmest be-
45′ and 6° 15′ of north latitude, where
n found by actual observation to vary
n 82° 5′ to 84° 5′ of Fahrenheit's ther-
There, too, the temperature of the sea
ly a few degrees higher than that of the
reposes upon it. Nearer the poles the
of the seasons on the surface of the
comes more sensible; but, as the tem-
of the water changes more slowly than
the atmosphere, the means do not, in
time, exactly correspond. Where not
by local causes, the mean temperature
urface water is not very different from
e incumbent atmosphere. It is about
equator, 70° at 26° of north latitude,
t 45°. The temperature diminishes as
increases. M. Peron found that at
of 380 fathoms, the temperature was
5′, though at the surface it was 80°.
greatly modify the temperature by
ng the water of one region to another,
in some degree by the agitation they
While the current which sets into the Gulf
o is much warmer than the adjacent
he sea, it is not so warm as that which
ugh Magellan's Straits into the Pacific.
ldt made various experiments on the
the Atlantic Ocean, between the 9th
nd the 15th of July, 1799, from which
ing are selected :

	West lon.	Temperature of the Atlantic ocean, at its surface.
	° ′	° ′
. . .	16 18 . . .	59 00 Fahrenheit
. . .	16 55 . . .	61 34
. . .	17 4 . . .	63 86
. .	16 54 . . .	65 48
. . .	16 40 . . .	66 74
. . .	19 13 . . .	68 00
. . .	28 51 . . .	70 16
17 57 . . .	33 14 . . .	72 32
14 57 . . .	44 40 . . .	74 66
13 51 . . .	49 43 . . .	76 46
10 46 . . .	60 54 . . .	78 44

He farther remarks that, 'from Corunna to the mouth of the Tagus, the water of the sea varied but little in its temperature; but from the thirty-ninth degree of latitude to the tenth, the increment was very sensible and very constant, though not always uniform. From the parallel of Cape Montego to that of Salvage, the progress of the thermometer was almost as rapid as from 20° 18′ to 10° 46′; but it slackened extremely at the limits of the torrid zone, from 29° 18′ to 20° 8′. This inequality is, no doubt, caused by the currents that mingle the waters of different latitudes, and which, as we approach the Canary Islands, or the coast of Guiana, set either to the south-east, or north-west. M. de Churuca, who crossed the equator in his voyage to the straits of Magellan, in the twenty-fifth degree of west longitude (in October), found the maximum of the temperature of the Atlantic ocean, at the surface in 6° of north latitude.' *Humboldt's Personal Narrative.*

Masses of ice, and icebergs, having their origin in high latitudes, are carried towards the south and south-west by the general current, which flows from the poles towards the equator; and they have a great influence in lowering the summer temperature both of the ocean and atmosphere. Fragments of these icebergs occasionally reach the fortieth degree of latitude. At 50° the rivers, lakes, and bays, of the sea, sometimes freeze; and at 60°, the gulfs and interior seas sometimes freeze in their whole extent.

ATLANTIDES, in astronomy, the Pleiades, or seven stars, so called, as being supposed to have been the daughters of Atlas, who, the poets fabled, were translated into heaven.

ATLANTIS, ATALANTIS, or ATLANTICA; an island mentioned by Plato and some others of the ancients, concerning the real existence of which there have been many disputes. Homer, Horace, and the other poets, make two Atlanticas, calling them Hesperides and Elysian Fields, making them the habitations of the blessed. The most distinct account of this island we have in Plato's Timæus, of which Mr. Chambers gives the following abridgement. 'The Atlantis was a large island in the western ocean, situated opposite to the straits of Gades. Out of this island there was an easy passage into some others, which lay near a large continent, exceeding in bigness all Europe and Asia. Neptune settled in this island, from whose son, Atlas, its name was derived, and divided it among his ten sons. To the youngest fell the extremity of the island, called Gadir; which, in the language of the country, signifies fertile, or abundant in sheep. The descendants of Neptune reigned here from father to son for a great number of generations in the order of primogeniture, during the space of 9000 years. They also possessed several other islands; and, passing into Europe and Africa, subdued all Lybia as far as Egypt, and all Europe to Asia Minor. At length the island sunk under water: and for a long time afterwards the sea thereabouts was full of rocks and shelves.' Many of the moderns also are of opinion, that the existence of the Atlantis is not to be looked upon as entirely fabulous. Some take it to have been America; and from thence, as well as from a passage in Seneca's Medea, and some other obscure hints, they imagine that the new world was not unknown to the ancients. But allowing this to be the case, the above-mentioned continent, which was said to lie beyond Atlantis, would seem rather to have been the continent of America than that of Atlantis itself. The learned Rudbeck, professor in the University of Upsal, in a work entitled Atlantica sive Manheim, endeavours to prove that Sweden and Norway are the Atlantis of the ancients; but this its situation will not allow us to believe. By Kircher it is supposed to have been an island extending from the Canaries to the Azores; that it was swallowed up by the ocean, as Plato asserts; and that these mall islands are the shattered remains of it.

Atlas, one of the Titans, son of Japetus and Clymene, one of the Oceanides. He was brother to Epimetheus, Prometheus, and Menœtius. He married Pleione, daughter of Oceanus, or Hesperis, according to others, by whom he had seven daughters, called Atlantides. He was king of Mauritania, and master of a thousand flocks; as also of beautiful gardens, abounding in fruit, which he entrusted to the care of a dragon. Perseus, after the conquest of the Gorgons, passed by the palace of Atlas, and demanded hospitality. The king, who had been informed by Themis that he should be dethroned by one of the descendants of Jupiter, refused to receive him. Perseus showed him Medusa's head, and Atlas was instantly changed into a large mountain. This mountain which runs across the deserts of Africa, east and west, is so high that the ancients have imagined that the heavens rested on its top, and that Atlas supported the world on his shoulders. Hyginus says, that Atlas assisted the giants in their wars against the gods, for which Jupiter compelled him to bear the heavens on his shoulders.

Atlas, in anatomy, the name of the first vertebra of the neck, which supports the head. It has no spinal apophyses; because the motions of the head do not turn on this vertebra, but on the second.

Atlas, in architecture, is a name given to those figures, or half figures of men, sometimes used instead of columns, or pilasters, to support any member of architecture, as a balcony, or the like. These Atlantes are also called Telamones.

Atlas, in commerce, a silk satin, manufactured in the East Indies. There are some plain, some striped, some flowered, the flowers of which are either gold, or silk. There are atlasses of all colors; but most of them false, especially the red and the crimson. The manufacture of them is admirable, the gold and silk being worked together after such a manner as no workman in Europe can imitate; yet they are far from having that fine lustre which the French know how to give to their silk stuffs. In the Chinese manufactures of this sort, they gild paper on one side with leaf-gold; then cut it in long slips, and weave it into their silks; which makes them, with little cost, look very rich and fine. The same long slips are twisted about silk threads, so artificially, as to look finer than gold thread, though it be of no great value.

Atlas, in geography, a lofty chain of mountains which separate Barbary from the great desert of Zaara. They are said to have derived their name from Atlas, king of Mauritania. The mountains which form the eastern boundary of the empire of Morocco are by far the loftiest part of this chain; their height rises to upwards of 13,000 feet; and their summits are covered with perpetual snow. As the chain stretches through eastern Barbary, it diminishes considerably in height, spreading into various branches. These Dr. Shaw represents as generally consisting of a number of little hills of the perpendicular height of 400 or 500 yards, covered with groves, and ranges of fruit and forest trees rising behind each other. From this chain numerous rivers descend and fertilise the plains of Morocco in their way to the ocean; while others flow southwards into the desert, till they are lost in its sands. The geology of the Atlas is very little known; but its basis is probably granite, while in its lower parts calcareous rocks appear to prevail. Considering its extent and magnitude, the Atlas does not produce any very copious supply of minerals. Lead and silver are obtained in considerable quantity, and farther to the south are mines of gold and silver, which the sovereigns of Morocco have prevented from being worked, from jealousy of the natives. Antimony, for which there exists an extensive demand as a cosmetic, is drawn very copiously from these mountains. The most valuable kind is found near Tafilelt, and is called El Kahol Filelly. Opposite to Terodant, sulphur is found in immense quantities. Iron is also produced though not very abundantly. The ancients, whose knowledge of geography was very confined, conceived these mountains to be the pillars of the world, and that their summit upheld the heaven.

ATMOMETER, (from *ατμος*, vapor, and *μετρον*, a measure). An instrument invented by professor Leslie for ascertaining the quantity of moisture exhaled from a humid surface in a given time. In consists of a thin ball of porous earthenware, from one to three inches in diameter, having a small neck firmly cemented to a long wide glass tube, to which a brass case is adapted, with a close fitting collar of leather. Being filled with distilled water, the waste and descent of this column indicates the quantity of evaporation from the surface of the ball. The tube is marked downwards with lines, from 200 to 500 in number, corresponding to the rings of fluid that, if spread over the whole exhaling surface, would form a film 1000th of an inch in thickness. The cavity of the instrument is next to be filled with distilled water, and its cap secured tight, and then suspended in a situation exposed to wind, but not to rain. The will transude through the porous matter ball as fast as it evaporates from the ext surface; and the waste is measured by the responding descent of the liquid in the stem.

ATLITA, in entomology, a species of papilio, indented, brown, fulvous beneath, with undulated glaucous streaks, and five blind-eye shaped spots Native of the East Indies.

ATMOSPHERE, } From the Gr. *ατμος*, vapor, and *σφαιρα*, sphere. The body of air and vapor that surrounds the earth.
ATMOSPHER'ICAL. }

ATMOSPHERE; this word is used to signify the whole of the fluid mass consisting of air, aqueous and other vapors. electric fluids, &c. which surrounds the earth to a considerable height, and partakes of both its diurnal motion on its axis, and its annual motion round the sun. Its composition was, until within these few years, very little known. That it is a very heterogeneous mass, might readily be concluded, upon considering that it is the common receptacle of all the effluvia, exhalations, and particles, raised from innumerable bodies upon the earth: hence it has been compared to a vast chemical vessel in which the matter of all kinds of bodies is continually floating, and thus exposed to the action of the sun; from whence proceed innumerable operations, sublimations, separations, compositions, digestions, fermentations, putrefactions, &c. The discoveries of modern chemistry have, however, shown us its essential constituents and their proportions, a subject which we have treated at considerable length under the word AIR

It only remains therefore for us to add a few supplementary observations to that paper; and these will principally respect the figure of the atmosphere and its supposed limits. If the earth had no diurnal rotation upon its axis, then according to the laws of gravity the atmosphere would be of an uniform height, enclosing the earth, which in this case would be perfectly spherical. But as the earth and the atmosphere revolve about an axis, the different parts of both have a centrifugal force, by which their gravity is diminished towards the equator, the figure of the atmosphere becomes an oblate spheroid; the parts that correspond to the equator being farther removed from the centre than the parts that correspond to the poles, and the ratio of the poles to the equatorial diameter, being as two to three. Besides, the figure of the atmosphere must on another account represent a flattened spheroid; namely, because the sun strikes more directly the air between the tropics, than the air in the polar regions, and hence the mass of atmospheric air adjoining the poles being less heated, cannot expand so much, nor reach so high as the air in the neighbourhood of the equator. And yet higher columns about the equatorial regions may not be heavier than those at the poles; seeing that the same force which contributes to elevate the air, diminishes its gravity and pressure on the surface of the earth.

Mr. Kirwan has given in the Transactions of the Royal Irish Academy an ingenious dissertation on the figure, height, weight, &c. of the atmosphere, where he observes, that in the natural state of the atmosphere, its weight must be equal over all the earth, and since the density of the air at the earth's surface increases from the equator to the poles, its height must diminish from the poles to the equator, and from this it follows that although the equatorial air be less dense to a certain height than the polar, yet at some greater heights it must be more dense. Hence it is inferred that in the higher regions of the atmosphere, the denser equatorial air not being supported by the collateral extra-tropical columns, gradually flows over and rolls down to the north and south.

La Place, in that part of his Systeme du Monde which treats of the atmosphere of the planets, ingeniously observes, that in all the changes to which the atmosphere is subject, the sum of the products of the particles of the revolving body and its atmosphere, multiplied respectively by the areas they describe round the common centre of gravity (the radii being projected on the plane of the equator), remains the same in equal times. Supposing therefore by any cause whatever, the atmosphere should be contracted, or that part thereof should become condensed on the surface of the body, the rotatory motion of the latter and its atmosphere would be accelerated; for the radii vectores of the areas described by the particles of the original atmosphere becoming smaller, the sum of the products of all the particles by their corresponding areas cannot remain the same unless their velocities be augmented.

The limits of the atmosphere have been a frequent subject of philosophical inquiry, especially since it was discovered by the Torricellian tube that air is endued with weight and pressure. Indeed, if the air possessed no elastic power, but were everywhere of the same density, from the surface of the earth to the extreme limit of the atmosphere, like water, which is equally dense at all depths, the whole height of the atmosphere might be ascertained without difficulty. It has been well established, that the weight of a column of air reaching to the top of the atmosphere, is equal to the weight of the mercury contained in the barometer, and counterbalancing it; and the proportion of weight likewise being known between equal bulks of air and mercury, it will be easy to find the height of such a column, and consequently that of the atmosphere itself. For a column of air one inch high being to an equal column of mercury as 1 to 11364·6; it is evident that 11364·6 such columns of air, that is a column 947 feet high, would be equal in weight to one inch of mercury: and consequently the 30 inches of mercury sustained in the barometer, require a column of air 28,410 feet high; whence the height of the atmosphere would only be 28,410 feet, or little more than five English miles and a quarter high. But the air by its elastic property expands and contracts; and it being found by repeated experiments that the spaces it takes up when compressed by different weights, are reciprocally proportional to those weights themselves; or, that the air takes up the less space the more it is pressed; it follows that the air in the upper regions of the atmosphere, where the weight is so much less must be much rarer than near the surface of the earth; and consequently that the height of the atmosphere must be much greater than is above assigned.

On this subject it has been further and well remarked, that if the earth were perfectly motionless, the elasticity of the atmosphere uniformly as the compressing force, and matter infinitely divisible, we could have no other than an atmosphere indefinitely extended; but the diurnal motion at a certain height brings the centrifugal force equal to that of gravity, and beyond this limit no atmosphere can exist. Its particles by the operation of this force would here become projected into space; and the process would continue until the entire atmosphere was dissipated. Dr. Wollaston, in an ingenious paper in Part I. of the Philosophical Transactions for 1822, observes, that if we admit that air has been rarefied so as to sustain only $\frac{1}{100}$ of an inch of barometrical pressure, and that this measure has afforded a true estimate of its rarity, we should infer from the law of elasticity observed within certain limits, that the atmosphere extends at least to the height of forty miles with properties yet unimpaired by extreme rarefaction. Beyond this limit we are left to conjecture, founded on the supposed divisibility of matter; and if this be infinite, so also must be the extent of the atmosphere, except so far as regards the centrifugal force to which we have already referred; for if the density be throughout as the compressing force, then must a stratum of given thickness at every height be compressed by a superincumbent atmosphere, bearing a constant ratio to its own weight, whatever be its distance from the earth. But if air consists of any ultimate particles no longer divisible, then must expansion of the medium composed of them cease at that distance where the force of gravity downwards upon a single particle is equal to the resistance arising from the repulsive force of the medium.

On the supposition of limited divisibility, the atmosphere which surrounds us must be conceived to be a medium of finite extent, and may be peculiar to our planet, since its properties would afford no ground to presume that similar matter exists in any other planet. But if we adopt the supposition of unlimited expansion, we must conceive the same kind of matter to pervade all space, where it would not be in equilibrio unless the sun, the moon, and all the planets possessed their respective shares of it condensed around them, in degrees depending upon their respective force of attraction, unless in those instances where the tendency to accumulate may be counteracted by the interference of other kinds of matter, or of other powers of which we have no experience, and concerning which we cannot be supposed to reason correctly.

Now on this supposition, since we know the mass and diameter of the principal bodies in our system, we should know also the density of their atmospheres at their respective surfaces; and also at what distance from the surface of each, the density would be the same as at the surface of the earth; at which height a sensible degree of refraction that is more than a degree, ought to be produced on a ray of light passing through it. For example, if the mass of the sun be considered as 330,000 times that of the earth, the distance at which his force is equal to that of terrestrial gravity at our surface, will be $\sqrt{330\,000}$, or about 575 times the earth's radius; and if his radius be 111·5 times that of the earth then the distance will be $\frac{575}{111{\cdot}5} = 5{\cdot}15$ times the sun's radius. Now the mean apparent semi-diameter of the sun being 15′49″, we have $15' 49'' \times 5{\cdot}15 = 1° 21' 29''$, for the distance from the sun's centre, where the refractive power of his atmosphere is equal to that at the earth's surface; that is where it would produce a deviation of a degree to a ray passing through it at that distance. We are able, as Dr. Wollaston has shown, to observe Venus within this distance of the sun; and since in this observation we find no effect produced by refraction, the observed and computed places agreeing to a fraction of a minute, we have a right to infer that at the distance we have computed, the density of the sun's atmosphere is not such as it would be if each body in the system possessed an atmosphere proportional to its own attractive power; but this must be the case if the elastic matter of the atmosphere were infinitely divisible, hence then again we may conclude that matter is not infinitely divisible, and consequently that the atmosphere of this earth is of a finite and limited height, and may be peculiar to it. But some doubt will hang over this deduction in respect to the sun, on account of the probable heat near his surface, which may produce a rarefaction far exceeding any thing that we can form an idea of; but this will not be the case if we select Jupiter as the body for observation.

Since the mass of Jupiter is full 309 times that of the earth, the distance at which his attraction is equal to gravity must be about $\sqrt{309}$, or 17·6 times the earth's radius; and since his diameter is nearly 11 times greater than that of the earth, we shall have $\frac{17{\cdot}6}{11} = 1{\cdot}6$ times his own radius; for the distance from his centre at which an atmosphere equal to our own should occasion a refraction exceeding one degree to the fourth satellite. This distance would subtend an angle of about 3° 37′, so that an increase of density to $3\frac{1}{3}$ times our common atmosphere, would be more than sufficient to render the fourth satellite visible to us when behind the centre of the planet; and consequently to make it appear on both or all sides at the same time. Hence, whatever doubt may remain on the deduction made from observations on Venus seen through the solar atmosphere, in consequence of the possible effects of heat which cannot be appreciated, it is evident that no error from this source can be apprehended in regard to Jupiter. This planet therefore does not possess an atmosphere proportional to his mass, as he would do if the matter composing it were infinitely divisible, and therefore, as we have seen, common to the whole solar system. Hence then we have a right to conclude, that matter is not infinitely divisible, and that each planet possesses an atmospher peculiar to itself of limited height, composed o ultimate atoms of definite magnitude, no longe divisible by the repulsion of their parts.

We may, in conclusion, observe that to th refractive and attractive power of the atmospher we owe all the blessings and phenomena o twilight. By the former the rays of light ar the right-lined direction, by the latter e enlightened more uniformly on all ie want of this power would occasion alteration in the appearance of things; would be totally dark, and the en- sides of objects overpoweringly bright; obably we could see no more of them bright halves; and for a view of the other ist turn them round, or, if immovable, the sun could come round upon them. llucid unreflective atmosphere might ommodious for astronomical observa- ie course of the sun and planets among stars visible by day as well as by night; a sudden transition from darkness to l from light to darkness immediately rising and setting of the sun, without ght, and even upon turning to or from at noon day, would be very incon- nd offensive to our eyes. See *Keil's ect.* 20, &c. See also LIGHT and RE- in our alphabet.

LENS OCULI, in anatomy, a name Albinus to one of his quatuor recti oculi. This is the muscle called by and others, the superbus, and by the elevator oculi.

I,
CAL,
ST,
LIKE,
LOGY,
.

From *α*, privative, and *τεμνω*, to cut. Something so small as not to be cut into smaller particles; so simple as not to be capable of reduction to simpler elements.

asy to count *atoms*, as to resolve the pro- f a lover. *Shakspeare. As You Like it.*

awn with a team of little *atomies*,
art men's noses, as they lie asleep.
Shakspeare.

and pellucid bodies are clearer in their s, than in powders and *atomical* divisions.
Brown's Vulgar Errours.

atomic theists utterly evacuate that grand for a God, taken from the phenomenon of al frame of things, which has been so much on in all ages.
Cudworth's Intellectual System.

rable minute bodies are called *atoms*; be- reason of their perfect solidity, they were visible. *Ray.*

IIC THEORY. A species of philoso- ntly introduced into chemistry, and on the axiom, "that chemical union in the combination of the atoms of ith each other;" so that, when two emically unite and form a third body, substances united are dispersed every ough the new compound. Thus saltpetre ound of nitric acid and potash; and, if ne so small a portion of this salt as the rt of a grain, it will be found to be ded of these two substances, nitric acid h: and if any part had not these con- it would not be saltpetre. See AT- .

E', v. & ad.
MENT,
MAKER,

To be *at one*. Implying a state of former estrangement, and ex- present reconciliation. To satisfy the claims of justice and equity by making repara tion and expiation; to enjoy the renewed friendship and regard of the injured party.

Paul sayth, 1 Timothy ii. One God, one Mediator (that is to say, aduocate, intercessor, or an *atonemaker*), betweene God and man; the man Christ Jesus which gaue himselfe a raunsom for all men.
The Whole Workes of W. Tyndall, fol. 158. c. i.

He seeks, to make *atonement*,
Between the duke of Glo'ster and your brothers.
Shakspeare.

He and Aufidius can no more *atone*,
Than violentest contrariety. *Id. Coriolanus.*

From a mean stock, the pious Decii came;
Yet such their virtues, that their loss alone,
For Rome and all our legions, did *atone*.
Dryden. Juvenal.

The good intention of a man of weight and worth, or a real friend, seldom *atones* for the uneasiness produced by his grave representations *Locke.*

Let thy sublime meridian course
For Mary's setting rays *atone*:
Our lustre, with redoubled force,
Must now proceed from thee alone. *Prior.*

His virgin sword Ægysthus' veins imbrued;
The murd'rer fell, and blood *aton'd* for blood.
Pope.

Soon should yon boasters cease their haughty strife;
Or each *atone* his guilty love, with life. *Id.*

And the Levites were purified; and Aaron made an *atonement* for them, to cleanse them. *Numbers.*

Surely, it is not a sufficient *atonement* for the writers; that they profess loyalty to the government, and sprinkle some arguments in favour of the dissenters; and, under the shelter of popular politicks and religion, undermine the foundations of all piety and virtue. *Swift.*

If any contention arose, he knew none fitter to be their judge, to *atone*, and make up their quarrels, but himself. *Drummond.*

ATONEMENT. The word בפר, translated atonement in the sacred writings, some writers say, signifies covering; and thus it would seem to imply that man can only be at-one with an infinitely just God, when that for which his progenitor was banished God's presence, and that which he has himself acquired by following a similar course, is covered. See EXPIATION and SACRIFICE.

ATONICS, in grammar, words unaccented.

ATONY; from *α*, and *τονος*, tone; in medicine, a defect of tone or tension, or a laxity o: debility of the solids of the body.

ATOOI, one of the Sandwich islands.—Towards the north-west and north-east the face of the country is ragged and broken; but to the southward it is more even. The hills rise from the sea side with a gentle acclivity, and, at a little distance back, are covered with wood. Its produce is the same with that of the other islands of this cluster; but its plantations are managed much better than those of all the neighbouring islands. In the low grounds, contiguous to the bay wherein our navigators anchored, they were regularly divided by deep ditches; the fences were formed with a neatness approaching to elegance, and the roads through them were finished in such a manner as would have reflected credit even on an European engineer. The anchoring place, which our vessel occupied, is on the south-west side of the island, about two leagues from the west end, before a village named Wymoa. As far as was sounded, the bank was free from rocks, except to the eastward of the village, where there projects a shoal, on which are some rocks and breakers. This road is somewhat exposed to the trade wind, notwithstanding which defect, it is far from being a bad station, and greatly superior to those which necessity continually obliges ships to use, in countries where the winds are not only more variable, but more boisterous; as at Madeira, Teneriffe, the Azores, &c. The landing too is not so difficult as at most of those places; and, unless in very bad weather, is always practicable. The water in the neighbourhood is excellent, and may be conveyed with ease to the boats. But no wood can be cut at any convenient distance, unless the islanders could be prevailed upon to part with the few etooa trees (cordia sebestina) that grow about their villages, or a species called dooe dooe, which grows farther up the country. Atooi is about 300 miles in circumference. Long. 200° 20′ E., lat. 21° 57′ N.

The natives of Atooi are of the middle size, and in general stoutly made. They are neither remarkable for a beautiful shape nor for striking features. Their visage, particularly that of the women, is sometimes round, but others have it long; nor can it justly be said that they are distinguished as a nation by any general cast of countenance. Their complexion is nearly of a nut brown; but some individuals are of a darker hue. They are far from being ugly, and have, to all appearance, few natural deformities of any kind. Their skin is not very soft nor shining; but their eyes and teeth are, for the most part, pretty good. Their hair in general is straight; and though its natural color is usually black, they stain it, as at the Friendly and other Islands. They are active, vigorous, and most expert swimmers, leaving their canoes upon the most frivolous occasion, diving under them and swimming to others, though at a considerable distance. Women with infants at the breast, when the surf was so high as to prevent their landing in the canoes, frequently leapt overboard, and swam to the shore without endangering their little ones. They appeared to be of a frank cheerful disposition, and are equally free from the fickle levity which characterises the inhabitants of Otaheite, and the sedate cast which is observable among many of those of Tongataboo. They seem to cultivate a sociable intercourse with each other; and except the propensity to thieving, which is as it were innate in most of the people in those seas, they appeared extremely friendly. It was pleasing to observe with what affection the women managed their infants, and with what alacrity the men contributed their assistance in such a tender office; thus distinguishing themselves from those savages who consider a wife and child as things rather necessary than desirable, or worthy of their regard and esteem. From the numbers that were seen assembled at every village, in coasting along, it was conjectured that the inhabitants of this island are pretty numerous. Including the straggling houses, it was computed there might perhaps be, in the whole island, sixty such villages as that near which our ships anchored; and, allowing five persons to each house, there would be in every village 500, or 30,000 in all upon the island. This is by no means exaggerated: for there were sometimes 3000 people at least collected upon the beach, when it could not be supposed tha above a tenth part of the natives were present.

The ground, from the wooded part to the sea, is covered with an excellent kind of grass, about two feet in height, which sometimes grows in tufts, and appeared capable of being converted into abundant crops of fine hay. But on this extensive spot not even a shrub grows naturally. Besides taro, the sweet potatoe, and other similar vegetables used by our crews as refreshments, among which were at least five or six varieties of plantains, the island produces bread fruit; which, however, seems to be scarce. There are also a few cocoa palms; some yams; the kappe of the Friendly Islands, or Virginian arum; the etooa tree, and odoriferous gardenia or cape jasmine. Our people also met with several trees of the dooe dooe, that bear the oily nuts, which are stuck upon a kind of skewer, and made use of as candles. There is a species of sida, or Indian mallow; also the morinda citrifolia, which is here called *none*; a species of convolvulus; the ava or intoxicating pepper, besides great quantities of gourds. These last grow to a very large size, and are of a remarkable variety of shapes, which are perhaps the effect of art. The scarlet birds, which were brought for sale, were never met with alive; except one small one, about the size of a canary bird, of a deep crimson color. A large owl, two brown hawks or kites, and a wild duck, were also seen. Other birds were mentioned by the natives; among which were the otoo, or bluish heron, and the torata, a sort of whimbrel. It is probable that this species of birds are numerous, if we may judge by the quantity of fine yellow, green, and small, velvet-like, blackish feathers, used upon the cloaks and other ornaments worn by these people. Fish, and other productions of the sea, were to appearance not various. The only tame or domestic animals found here were hogs, dogs, and fowls which were all of the same kind that had bee met with at the islands of the South Pacifi There were also small lizards, and some rats.

ATOP. On top, at the top. See TOP.

> *Atop* whereof, but far more rich, appear'd
> The work, as of a kingly palace-gate.
>
> *Paradise L*

> What is extracted by water from coffee is the
> which often swims *atop* of the decoction.
>
> *Arbuthnot on Ali*

ATRA BILIS, black bile, or melancho According to the ancients it hath a two-fold o gin: first, from the grosser parts of the bloo and this they called the melancholy hum Second, from yellow bile being highly concoct Dr. Percival, in his Essays Medical and Expe mental, suggests that it is the gall, rende acrid by a stagnation in the gall-bladder, rendered viscid by the absorption of all its f parts. Bile in this state discharged into duodenum, occasions universal disturbance disorder until it is evacuated; it occasions lent vomiting or purging, or both; and, prev to this, the pulse is quick, the head aches, a delirium comes on, a hiccough, intense thirst, inward heat, and a fetid breath. Some describe this kind of bile as being acid, harsh, corroding, and, when poured on the ground, bubbling up, and raising the earth, after the manner of a ferment. Dr. Percival says, that by the use of the infus. sennæ limoniat., warmed with the tinct. columb., he had checked the vomitings occasioned by this matter.

ATRACTOCERUS, in entomology, a genus of the order coleoptera, and family malacodermi. Its generic characters are: antennæ simple, and fusiform; short elytra, and sub-quadrate thorax. There is but one species, A. necydaloides, the necydalis brevicornis of Linnæus.

ATRACTYLIS, distaff thistle, a genus of the polygamia æqualis order, and syngenesia class of plants. Its generic characters are: CAL. many leaved: COR. compound radiate: STAM. five filaments; cylindric anther: PIST. germen very short; style filiform; stigma bifid: PER. none: SEEDS turbinate. The species are: 1. A. cancellata, or small cnicus, an annual plant, rising about eight or nine inches high, with a slender stem, garnished with hoary leaves, having spines on their edges. 2. A gummifera, or prickly gum-bearing cnicus, known among physicians by the name of carline thistle, is a perennial plant. It sends out many narrow leaves, which are armed with spines on their edges, and lie close on the ground; between them the flower is situated, without a stalk, and having many florets enclosed in a prickly empalement. Its roots were formerly used as a warm diaphoretic and alexipharmic; but never came much into use in Britain, and the present practice has entirely rejected them. 3. A humilis, or purple prickly cnicus, a perennial plant, rising about a foot high, with indented leaves, having small spines on their edges. All these plants are natives of the warm parts of Europe, as Spain, Sicily, and the Archipelago islands.

ATRA DIES, in antiquity. The word literally imports a black day; a denomination taken from the color, which is the emblem of death and mourning. Whence the Thracians had a custom of marking all their happy days with white stones or calculi, and their unhappy days with black ones; which they cast, at the close of each day, into an urn. At the person's death the stones were taken out; and, from a comparison of the numbers of each complexion, a judgment was made of the felicity or infelicity of his course of life. The dies atræ, or atri, were denominated nefasti, and posteri. Such, in particular, was the day when the tribunes were defeated by the Gauls at the river Allia, and lost the city; also that whereon the battle of Cannæ was fought; and several others marked in the Roman calendar as atræ or unfortunate.

ATRAGENE, in botany, a genus of plants, class polyandria, order polygnia. Its generic characters are: CAL. four-leaved perianth: COR. twelve petals: STAM. filaments very many; oblong antheræ: PIST. germs many; villose style; stigma simple: PER. none: SEEDS very many. The species are shrubs, as atragene japonica, atragene alpina, &c.

ATRAMENT'AL, } Lat. *atramentum*, ink.
ATRAMENT'OUS. } Having the blackening property of ink.

> If we enquire, in what part of vitriol this *atramental* and denigrating condition lodgeth; it will seem, especially to lie in the more fixed tult thereof.
>
> *Brown's Vulgar Errours.*
>
> I am not satisfied, that those black and *atramentous* spots, which seem to represent them, are ocular.
>
> *Brown.*

ATRAPHAXIS, in botany, a genus of the digynia order and class of plants; natural order, twelfth, holoraceæ. CAL. two leaves; the petals are two, and sinuated; stigmas capitate; and there is but one seed. There are two species, both natives of warm countries

ATRATUS (Hugh), was born at Evesham, in Worcestershire. He made such proficiency in the knowledge of the sciences, particularly mathematics, medicine, and philosophy, that he was called the phœnix of the age. Pope Martin II. gave him a cardinal's hat in 1281. He died of the plague in 1287. He wrote Genealogiis Humanis Problemata; and also Canones Medicinalis.

ATRAX, in fabulous history, a son of Ætolus, or, as others say, of the river Peneus. He was king of Thessaly, and built a town which he named Atrax or Atracia; which became so famous that the word Atracius was commonly given to an inhabitant of Thessaly. He was the father of that Hippodamia who married Pirithous, and who must not be confounded with the wife of Pelops, who was so named.

ATREBATES, the ancient inhabitants of Gallia Belgica, who possessed that part of Gaul now called Artois. A colony of them settled in Britain. They are mentioned by Cæsar among the nations which composed the Belgic confederacy against him; and the quota of troops which they engaged to furnish on that occasion was 15,000.

ATREBATES, or ATREBATII, a people of Britain, seated next to the Bibroci, in part of Berkshire, and Oxfordshire; and one of those Belgic colonies which came out of Gaul into Britain, and there retained their ancient name. Comius of Arras was a king or chieftain among the Atrebates in Gaul, in Cæsar's time: and he seems to have possessed some authority over our Atrebatii in Britain; for he was sent by Cæsar to persuade them to submission. This circumstance makes it probable that this colony of the Atrebatii had not been settled in Britain very long before that time. The Atrebatii were among those British tribes which submitted to Cæsar; nor do we hear of any remarkable resistance they made against the Romans, at their next invasion, under Claudius.

ATRESIA; from α, and τραω, whence τιτραω, to perforate; in medicine, imperforation, or the state of those persons who want some natural aperture.

ATRETI, those persons of either sex in whom the anus, or genitals, are imperforate, whether naturally, or occasioned by some accident or disease; as the growth of some fleshy excrescence, or membrane, which stops the orifice

ATREUS, in fabulous history, the supposed king of Mycenæ and Argos, about A. A. C. 1228. He was the son of Pelops by Hippodamia, and brother to Pittheus, Troezen, Thyestes, and Chrysippus. The latter being an illegitimate son, and a favorite with his father, Hippodamia resolved to remove him; and for this purpose she endeavoured to persuade Thyestes and Atreus to murder him; but her arguments proving vain, she executed it herself. Pelops was grieved at his son's death; and the brothers being suspected, they fled from his presence. Atreus retired to the court of his nephew, Eurystheus king of Argos, on whose death he succeeded to that throne. Some writers say he married Ærope, his predecessor's daughter, by whom he had Plisthenes, Menelaus, and Agamemnon; but, according to others, Ærope was the wife of Plisthenes, by whom she had Agamemnon and Menelaus, who are the reputed sons of Atreus, because he took care of their education, and brought them up as his own. Thyestes had followed his brother to Argos, where he lived with him, and debauched his wife, by whom he had some children. When Atreus discovered this incestuous commerce, he banished his brother from his court; but, determined to have more ample revenge for the violence offered to his bed, he soon after recalled him, and invited him to a sumptuous feast. Thyestes was served up with the flesh of the children he had by his sister-in-law the queen; and, when the entertainment was over, to convince him of what he had feasted upon, the arms and the heads of the murdered children were shown him. This action appeared so horrid that the sun is said to have withdrawn his light. Thyestes fled directly to the court of Thesprotus, and thence to Sicyon, where he ravished his own daughter Pelopea, in a grove sacred to Minerva, not knowing who she was; though some say he committed this incest intentionally, to revenge himself on his brother Atreus, as the oracle had promised him satisfaction for the cruelties he had suffered, only by the hand of a son by himself with his own daughter. Pelopea brought forth a son whom she named Ægisthus, and soon after she married Atreus, who had lost his wife. Atreus adopted Ægisthus, and sent him to murder Thyestes, who had been made prisoner. Thyestes knew his son, and made himself known to him; when, instead of murdering his father, he espoused his cause, and avenged his wrongs by returning to Atreus and assassinating him.

ATRI, or Atria, a town of Italy, in Abruzzo, in Naples. It lies 26 miles west of Aquila, and was the birth place of the emperor Adrian. It is the see of a bishop, and is seated on a craggy mountain, five miles from the Adriatic sea. Long. 15° 20′ E., lat. 42° 40′ N.

ATRICAPILLA, in ornithology, a little bird, commonly known by the name of the black cap, and called, by some authors, ficedala, sycalis, or melanchoryphus, and by the Italians, caponegro.

ATRICES, or Attrices, in medicine, small tubercles about the anus, which sometimes disappear, and then return again, at least in their early state. They are ranked in the number of condylomata, or fici. Some authors also give the denomination atrici to a kind of latent wounds in the extremity of the rectum, which howe do not perforate it.

ATRICILLA, in ichthyology, a species of larus.

ATRIDES, a patronymic of Agamemnon Menelaus, the sons of Atreus.

ATRIENSES, in antiquity, a kind of servan in the great families at Rome, who had the ca of the atria, and the things lodged therein. S Atrium. They were also called atriarii, thou some make a distinction between atrienses a atriarii; suggesting, that the latter were an inf rior order of servants, employed in the more se vile offices of the atrium, as to attend at the doo sweep the area, &c. and to assist the forme The atrienses are represented as servants wh had command over the rest, and acted as agen for their master, in selling his goods, &c. T their care were committed the images of the ma ter's ancestors, &c. which were placed round t atrium; and which they carried in procession funerals, &c. In the country houses, the atrie ses had the care of the other furniture and ute sils, particularly those of metal, which they we to keep from rust. Other things they were hang in the sun, to keep them dry, &c. Th were clothed in a short white linen habit, distinguish them, and prevent their loitering fr home.

ATRIP, in nautical language, is applied eit to the anchor or sails. The anchor is atrip, wh it is drawn out of the ground, in a perpendicul direction, either by the cable or buoy ro The top sails are atrip, when they are hoisted to the mast head, or to their utmost extent.

ATRIPLEX, Orach, or Arrach, a gen of the monœcia order and polygamia class plants; natural order twelfth, holoraceæ. Ca the hermaphrodite flower, five-leaved; co none; stam. five; sty. bifid; seed, one, d pressed. There are fourteen species, of whi the following are the most remarkable: 1. A halimus, the broad leafed orach, formerly cult vated in gardens as a shrub, by some forme into hedges, and constantly sheared to keep the thick. It may be propagated by cuttings, an planted in any of the summer months, in a shad border; where they will soon take root, and b fit against the following Michaelmas to tran plant. 2. A. hortensis, the garden orach, was fo merly cultivated in gardens, and used as substitute for spinage. There are three or fo varieties of this plant, whose only difference their color; one is a deep green, another a da purple, and a third has green leaves and purp borders. They are all annual, and must be pr pagated by seeds. These are to be sown Michaelmas, soon after they are ripe. This sp cies is an article of the materia medica; a dec tion of the leaves is recommended in costiven where the patient is of a hot bilious dispositi 3. A. petulacoides, the shrubby sea orach, gro wild by the sea side, in many places of Brit It is a low under shrub, seldom rising above feet and a half, or at most three feet high; becomes very bushy.

ATRIUM, in antiquity, the large room court at the first entrance into the house, in wh the Romans used to sup, and in which they k the statues and images of their ancestors. In ecclesiastical antiquity it signified an open place or court before a church, making part of what was called the narthex, or antetemple. The atrium in the ancient churches was a large area or square plat of ground, surrounded with a portico or cloister, situtate between the porch or vestibule of the church and the body of the church. Some have mistakenly confounded the atrium with the porch or vestibule, from which it was distinct; others with the narthex, of which it was only a part. The atrium was the mansion of those who were not suffered to enter farther into the church. More particularly, it was the place where the first class of penitents stood to beg the prayers of the faithful, as they went into the church. Atrium, in the canon law, the cemetery or church yard. In this sense, we find a law, prohibiting buildings to be raised in atrio ecclesiæ, except for the clergy; which the glossary explains thus, id est in cæmeterio, which includes the space of forty paces around a large church, or thirty round a small church or chapel.

ATRO'CIOUS,
ATRO'CIOUSLY,
ATRO'CIOUSNESS,
ATRO'CITY.

} Lat. *atrox*. Perhaps *a*, intentive, and *trux*, fierce, savage, rough in manners. Used in the sense of inflexible, terrible, dreadful, enormously wicked.

An advocate is necessary; and therefore audience ought not to be denied him in defending causes, unless it be an *atrocious* offence. *Ayliffe's Parergon.*

I never recal it to mind, without a deep astonishment of the very horror and *atrocity* of the fact in a Christian court. *Wotton.*

They desired justice might be done upon offenders, as the *atrocity* of their crimes deserved. *Clarendon.*

Bad as Herod was, the petition of Salome at first shocked him. 'The king was sorry.' He thought of John's character, the *atrociousness* of the murder, and the opinion which the world would entertain of the murderer.

Horne on the Life and Death of St. John the Baptist.

ATROPA, DEADLY NIGHT-SHADE: A genus of the monogynia order, and pentandria class of plants; natural order twenty-fifth, Luridæ. The corolla is campanulated; the stamina are distant; the berry is globular, and consisting of two cells. There are eight species; the most common are: 1. A. belladonna, growing wild in many parts of Britain. It hath a perennial root, which sends out strong herbaceous stalks of a purplish color. These rise to the height of four or five feet, garnished with entire oblong leaves, which, towards autumn, change to a purplish color. The flowers are large, and come out singly between the leaves, upon long foot stalks; bell-shaped, and of a dusky color on the outside, but purplish within. After the flower is past, the germen turns to a red berry, a little flatted at the top, about the size of a cherry. It is first green; but when ripe, turns to a shining black, sits close upon the empalement, and contains a purple juice of a nauseous sweet taste, and full of small kidney-shaped seeds. This species being remarkable for its poisonous qualities, is very seldom admitted into gardens, nor should it ever be cultivated or allowed to grow in those places to which children have access. The symptoms produced by this poison are vertigo, delirium, great thirst, painful deglutition, and retching, followed by furor, stridor dentium, and convulsions; the eye-lids are drawn down, the uvea dilated and immovable, the face becomes red and tumid, and spasms affect the mouth and jaw; the sensibility and irritability of the body suffer such great diminution, that large and repeated doses of the strongest emetics produce no sensible effect; the pulse is small, hard, quick; and subsultus tendinum, risus sardonius, and coma, close the fatal scene. Vinegar liberally drank has been found most efficacious in obviating the effects of this poison. The leaves of the belladonna were first used externally to discuss scirrhous and cancerous tumors, and as an application to ill-conditioned ulcers; and their good effects in this way at length induced physicians to employ them internally for the same disorders; and we find a considerable number of well-authenticated facts, which prove them to have been of important service. 2. A frutescens, is a native of Spain, and rises with a shrubby stem to the height of six or eight feet; dividing into many branches, garnished with round leaves, in shape like those of the storax tree: these are placed alternately on the branches. The flowers come out between the leaves, on short foot stalks, shaped like those of the former, but much less; of a dirty yellowish color, with a few brown stripes; but these are never succeeded by berries in Britain. 3. A herbacea, is a native of Campeachy, and has an herbaceous stalk and a perennial root, which puts forth several channelled herbaceous stalks, rising about two feet. Towards the top they divide into two or three small branches, garnished with oval leaves, four inches long, and three broad, having several prominent transverse ribs on their under side. The flowers come out from between the leaves; on short foot stalks; they are white, and shaped like those of the common sort, but smaller. It flowers in July and August, but seldom ripens its fruit in Britain. 4. A mandragora, the mandrake, has been distinguished into the male and female. The male mandrake has a very large, long, and thick root: it is largest at the top or head, and from thence, gradually grows smaller. Sometimes it is single and undivided to the bottom; but more frequently it is divided into two or more parts. From this root arise a number of very long leaves, broadest in the middle, narrow towards the base, and obtusely pointed at the end: they are a foot or more in length, and about five inches in breadth; of a dusky and disagreeable green color, and of a very feted smell. The female mandrake perfectly resembles the other in its growth; but the leaves are longer and narrower, and of a darker color, as are also the seeds and roots. It grows naturally in Spain, Portugal, Italy, and the Levant. These three last species are propagated by seeds, and placed in stoves. This plant has been recommended as a cure for barrenness. Its fresh root is a violent purge, the dose being from ten to twenty grains in substance, and from half a dram to a dram in infusion. It has been found to do service in hysteric complaints; but must be used with great caution, otherwise it will bring on convulsions, and other mischievous symptoms. It has also a narcotic quality. At present only the fresh leaves are sometimes used in anodyne and emollient cataplasms and fomentations. It used to be an ingredient in one of the old officinal unguents; but both that and the plant itself are now rejected from our pharmacopœias. It still, however, retains a place in the foreign ones, and may perhaps be considered as deserving farther attention. No modern botanist will admit the human figure ordinarily ascribed to its roots, especially since the discovery of the artifice of charlatans in fashioning it, to surprise the credulity of the people. Moses informs us, (Gen. xxx. 14.) that Reuben, being in the field, happened to find mandrakes, which he brought home to his mother Leah. Rachel wished for them, and obtained them from Leah, upon a certain condition. The term רודאים dudaim, here made use of by Moses, is one of those words of which the Jews at this day do not understand the true signification. Some translate it violets, others lilies or jessamine. Junius calls it agreeable flowers; Codurquus makes it truffle, or mushroom; but Calmet will have it to be the citron.

AT'ROPHY. From *α*, privative, and *τρεφω*, I nourish. Want of nourishment; a disorder, in which what is taken at the mouth, cannot contribute to the support of the body.

> Pining *atrophy*,
> Marasmus, and wide-wasting pestilence. *Milton.*

> The mouths of the lacteals may be shut up by a viscid mucus; in which case the chyle passeth by stool, and the person falleth into an *atrophy*.
> *Arbuthnot on Aliments.*

> The shaking head, and the contracted limb;
> And lingering *atrophy*, and hoary age. *Jago.*

ATROPHY. See MEDICINE, Index.

ATROPOS, in heathen mythology, the name of the third of the Parcæ, or Fates. Her business was to cut the thread of life.

ATTACH', } Fr. *attacher*, to fasten by
ATTACH'MENT. } means of some tie. To bind both literally and metaphorically.

> Eftzoons the guards, which on his state did wait,
> *Attach'd* that traitor false, and bound him strait.
> *Spenser.*

> The Tower was chosen; that if Clifford should accuse great ones, they might (without suspicion or noise) be presently *attached*. *Bacon's Henry* VII.

> Bohemia greets you:
> Desires you to *attach* his son, who has
> His dignity and duty both cast off.
> *Shakspeare.*

> *Attach* thee firmly to the virtuous deeds
> And offices of life: to life itself,
> With all its vain and transient joys, sit loose.
> *Mallet.*

> It must be confessed a happy *attachment*, which can reconcile the Laplander to his freezing snows, and the African to his scorching sun. *Cumberland.*

> A sensible mind cannot do violence even to a local *attachment* without much pain. *Cowper's Letters.*

ATTACHIAMENTA BONORUM, in ancient law books, denotes a distress taken upon the goods or chattels of any person sued for a personal estate, or debt, by the legal attachiators, as a security to answer the action.

ATTACHMENT, in the law of England, implies the taking or apprehending a person by virtue of a writ or precept. It is distinguished from an arrest, by proceeding out of a higher court, by precept or writ; whereas, the latter proceeds out of an inferior court, by precept on
An arrest lies only on the body of a ma
whereas, an attachment lies often on the goo
only, and sometimes on the body and goo

ATTACHMENT BY WRIT differs from distre
in not extending to lands, as the latter doe
nor does a distress touch the body as an attac
ment does.

ATTACHMENT, FOREIGN, is an attachment
money or goods found within a liberty
city, to satisfy some creditor within su
liberty or city. By the custom of Lond
and several other places, a man can attach mor
or goods in the hands of a stranger, to sati
himself. If a plaint be exhibited in the mayo
or the sheriff's court (the proceeding in the f
mer being the most advantageous) against
and the process be returned nihil, and thereu
the plaintiff suggests that another person wit
London is indebted to A, the debtor shall
warned (whence he is called the garnishee), a
if he does not deny himself to be indebted to
the debt shall be attached in his hands.
nothing is attachable, but for a certain and
debt; though by the custom of London, mor
may be attached before due, as a debt, but
levied before due. Sid. 327. 1 Nels. Abr. 2
283.

ATTACHMENT OF PRIVILEGE is, by vir
of a man's privilege, to call another to t
court whereto he himself belongs, and
respect whereof he is privileged to answer so
action.

ATTACHMENT OF THE FOREST, is one of t
four courts held in the king's forests. The low
court is called the court of attachment, or woo
mote court; the second is the court of regard,
survey of dogs; the third is that of swein-mot
the highest, the Justice in eyre's seat. This a
tachment is by three means: by goods and cha
tels, by body, pledges, and mainprize; or by bod
only. This court is held every forty days throug
out the year; whence it is also denominat
forty days' court.

ATTACHMENT OUT OF THE CHANCERY,
obtained upon an affidavit made, that the d
fendant was served with a subpœna, and mad
no appearance; or it issues upon not perform
ing some order or decree. Upon the retu
of this attachment by the sheriff, quod no
est inventus in balliva sua, another attachmen
with a proclamation, issues; and if he still ref
ses to appear, a commission of rebellion.

ATTACK', *v.* & *n.* Fr. *attaquer*; from *att*
cher, to come into close contact with hostile i
tentions; to be the aggressor, to offend.

> Satan who that day
> Prodigious power had shown, and met in arms
> No equal ranging through the dire *attack*
> Of fighting Seraphim, confus'd at length
> Saw where the sword of Michael smote. *Milt*

> An indiscreet man is more hurtful than an i
> natured one, for as the latter will only *attack* his en
> mies and those he wishes ill to; the other inju
> indifferently both friends and foes. *Addi*

> Hector opposes; and continues the *attack*; in whi
> Sarpedon makes the first breach in the wall.
> *Pope. Il*

ATTACOTTI, an ancient people of Brita
mentioned by Ammianus Marcellinus, and

Jerome, as well as in the Notitia Imperii. They are represented as allies of the Scots and Picts, and were, therefore, probably their neighbours; though their precise situation has not been determined by antiquaries.

ATTAGEN, *ατταγας*, or *ατταγεν*; in ornithology, the same with our gor-cock, moor-cock, or red game.

ATTAIN',
ATTAIN'ABLE,
ATTAIN'ABLENESS,
ATTAIN'MENT.
Lat. *attineo*; from *ad*, and *teneo*, to hold. To reach as the object of pursuit or effort, to realize one's desire, to procure.

Crowns and diadems, the most splendid terrene *attains*, are akin to that; which, to-day is in the field, and to-morrow is cut down. *Glanville's Scepsis.*

He wilfully neglects, the obtaining unspeakable good; which, he is persuaded is certain and *attainable*. *Tillotson.*

Persons become often enamoured of outward beauty, without any particular knowledge of its possessor, or its *attainableness* by them. *Cheyne.*

So pleas'd at first the tow'ring Alps we try,
Mount o'er the vales, and seem to tread the sky;
The eternal snows appear already past,
And the first clouds and mountains seem the last:
But those *attained*, we tremble to survey
The growing labour of the lengthened way,
The increasing prospect tires our wond'ring eyes,
Hills peep o'er hills, and Alps on Alps arise.
Pope's Essay on Criticism.

Among nations, as well as individuals, the powers of imagination *attain* some degree of vigour before the intellectual faculties are much exercised in speculative or abstract disquisition. *Robertson.*

ATTAINDER, in law, is the immediate consequence, when sentence of death, the highest judgment in our laws, is pronounced. For when it is now clear beyond all dispute, that the criminal is no longer fit to live upon the earth, but is to be exterminated as a monster and a bane to human society, the law sets a note of infamy upon him, puts him out of its protection, and takes no farther care of him than barely to see him executed. He is then called attaint, attinctus, stained, or blackened. He is no longer of any credit or reputation; he cannot be a witness in any court; neither is he capable of performing the functions of another man: for, by an anticipation of his punishment, he is already dead in law. This is after judgment; for there is a great difference between a man convicted and attainted; though they are frequently confounded together. After conviction only, a man is liable to none of these disabilities; for there is still in contemplation of law a possibility of his innocence. Something may be offered in arrest of judgment: the indictment may be erroneous, which will render his guilt uncertain, and thereupon the conviction may be quashed: he may obtain a pardon, or be allowed the benefit of clergy; both which suppose some latent sparks of merit, which plead in extenuation of his fault. But, when judgment is pronounced, both law and fact conspire to prove him completely guilty; and there is not the remotest possibility left of any thing to be said in his favor. Upon judgment, therefore, of death, the attainder of a criminal commences: or upon such circumstances as are equivalent to judgment of outlawry on a capital crime, pronounced for absconding from justices which tacitly confesses the guilt: and therefore, upon judgment, either of outlawry, or of death, for treason or felony, a man is said to be attainted. A person attainted of high treason, forfeits all his lands, tenements, and hereditaments; his blood is corrupted, and he and his posterity rendered base. See CORRUPTION, FORFEITURE, &c. Attainders may be reversed or falsified, (i. e. proved to be false) by writ of error, or by plea. If by writ of error, it must be by the king's leave, &c. and, when by plea, it may be by denying the treason, pleading a pardon by act of parliament, &c. Persons may be attainted by act of parliament. Acts of attainder of criminals have been passed in several reigns, on the discovery of plots and rebellions, from the reign of king Charles II. when an act was made for the attainder of several persons, guilty of the murder of king Charles I. Among acts of this nature, that for attainting Sir John Fenwick, for conspiring against king William, is the most remarkable; it being made to attaint and convict him of high treason, on the oath of one witness, just after a law had been enacted, 'That no person should be tried or attainted of high treason, where corruption of blood is incurred, but by the oath of two lawful witnesses, unless the party confess, stand mute, &c.' Stat. 7 and 8 W. III. cap. 3. But he was indicted of treason, on the oaths of two witnesses, though but only one could be produced against him on his trial. By the VIIth Ann. chap. 21, all corruption of blood, and the forfeiture for ever of a traitor's estate of inheritance, were to have ceased on the death of the then Pretender; but the legislative policy or panic of the reign of George II. caused a further extension of these vindictive principles of law, to the time of the death of the Pretender's sons. And, by an act of the 39th of the late king, the provisions of the statutes of Anne and of George II. for the future abrogation of these hard consequences of attainder, were repealed, and the law stood in its original severity. But by an act, introduced by Sir Samuel Romilly, in the 54th year of his late Majesty's reign, corruption of blood, and forfeiture beyond the term of the offender's own life were abolished, except in cases of treason, petty treason, and murder; thus, in part, realising the hope expressed by Mr. Justice Blackstone (Comm. b. iv. c. 29), 'That as every other oppressive mark of feudal tenure is happily worn away, corruption of blood, with all its connected consequences, not only of present escheat, but of future incapacities of inheritance, even to the twentieth generation, may in process of time be abolished by act of Parliament.'

ATTAINT', *v. n.* & *adj.*
ATTAIN'DER,
ATTAIN'TURE,
ATTAIN'MENT.
Old Fr. *attaindre*; from *tangere*, to touch, says Minshen, because he who is attainted is touched, caught, or taken: or, from *tingere*, to stain, which is more probable. To stain, to impute charge, or accuse.

Were it not an endless trouble, that no traitor or felon should be *attainted*, but a parliament must be called? *Spenser.*

I must offend, before I be *attainted*. *Shakspeare.*

His warlike shield
Was all of diamond, perfect, pure, and clean;
For, so exceeding shone his glistering ray,
That Phœbus' golden face it did *attaint*;
As, when a cloud his beams doth overlay.
Spenser's Faerie Queene.

My tender youth was never yet *attaint*
With any passion of inflaming love. *Shakesp.*

So smooth he daub'd his vice with shew of virtue;
He liv'd, from all *attainder* of suspect. *Id.*

Hume's knavery will be the duchess's wreck,
And her *attainture* will be Humphrey's fall. *Id.*

The ends in calling a parliament were chiefly, to have the *attainders* of all his party reversed; and, on the other side, to attaint by parliament his enemies. *Bacon.*

How would the sons of Troy in arms renown'd,
And Troy's proud dames whose garments sweep the ground,
Attaint the lustre of their former name,
Should Hector basely quit the field of fame?
Pope. Homer.

ATTAINT, in the English law, is a writ that lies after judgment against a jury of twelve men, that have given false verdict in any court of record, in an action real and personal, where the debt or damages amount to above forty shillings, stat. 5 and 34 Ed. III. c. 7. It is called attaint, because the party that obtains it endeavours thereby to stain or taint the credit of the jury with perjury, by whose verdict he is grieved. The jury who are to try this false verdict must be twenty-four, and are called the grand jury; for the law wills not that the oath of one jury of twelve men should be attainted or set aside by an equal number, nor by less indeed than double the former. And he that brings the attaint can give no other evidence to the grand jury, than what was originally given to the petit. For, as their verdict is now trying, and the question is, whether or no they did right upon the evidence that appeared to them, the law adjudged it the highest absurdity to produce any subsequent proof upon such trial, and to condemn the prior jurisdiction for not believing evidence which they never knew. But those against whom it is brought, are allowed, in the affirmance of the first verdict, to produce new matter: because the petit jury may have formed their verdict upon evidence of their own knowledge, which never appeared in court; and, because very terrible was the judgment which the common law inflicted upon them, if the grand jury found their verdict a false one. The judgment was, 1. That they should lose their liberam legem, and become for ever infamous. 2. That they should forfeit all their goods and chattels. 3. That their lands and tenements should be seized to the king. 4. That their wives and children should be thrown out of doors. 5. That their houses should be rased. 6. That their trees should be rooted up. 7. That their meadows should be ploughed. 8. That their bodies should be cast into jail. 9. That the party should be restored to all that he lost by reason of the unjust verdict. But, as the severity of this punishment had its usual effect, in preventing the law from being executed, therefore, by the statute 11 Hen. VII. c. 24, revived by 23 Hen. VIII. c. 3, and made perpetual by 13 Eliz. c. 25, it is allowed to be brought after the death of the party, and a more moderate punishment was inflicted upon attainted jurors; viz. perpetual infamy, and if the cause of action were above forty pounds value, a forfeiture of twenty pounds a-piece by the jurors; or, if under forty pounds, then five pounds a-piece; to be divided between the king and the party injured. So that a man may now bring an attaint, either upon the statute or at common law, at his election; and in both of them may reverse the former judgment. But, the practice of setting aside verdicts upon motion, and granting new trials, has so superseded the use of both sorts of attaints, that there is hardly any instance of an attaint later than the sixteenth century.

ATTAINT, or ATTEINT, in horsemanship, a hurt in a horse's leg, proceeding either from a blow with another horse's foot, or from an over-reach in frosty weather, when a horse, being rough-shod, or having shoes with long caulkers, strikes his hinder feet against his fore legs.

ATTALIA, in ancient geography, a sea-port of Pamphylia, seated on a bay of the Mediterranean sea; founded by one of the Attali, kings of Pergamus. In this city Paul and Barnabas preached, about A. D. 49; and it had bishops in the fifth and sixth centuries. It is now called SATTALIA.

ATTALICÆ VESTES, in antiquity, garments made of a kind of cloth of gold. They took the denomination from Attalus, surnamed Philometer, a wealthy king of Pergamus, who was the first, according to Pliny, who caused gold to be woven into cloth.

ATTELABUS, in zoology, a genus of insects belonging to the order of coleoptera, or the beetle kind. It has four wings, of which the superior are crustaceous, and serve as a sheath or cover to the inferior, which are membranous. The head tapers behind, and is inclined; the feelers turn thicker towards the apex. The species are thirteen. 1. A. apiarus is bluish, with red elytra, and three black belts. It is a native of Germany. 2. A. avellana is black, with the breast, feet, and elytra red. 3. A. betula has springy legs, and the whole body is of a dark red. It frequents the leaves of the birch. 4. A. buprestoides is of a dark color, with a globular breast, and nervous elytra. It is a native of Europe. 5. A. ceramboides, is of a blackish red color, and the elytra is furrowed. It frequents the spongy boletus, a species of mushroom. 6. A. coryli is black, with red elytra, or crustaceous wings. 7. A. curculionoides is black, with red elytra and breast. These two last species, and the avellana, frequent the leaves of the hazel and filbert-nut trees. 8. A. formicarius is black, with red elytra, and a double white belt towards the base. It is a native of Europe. 9. A. melanurus is black, with testaceous elytra, black at the apex. It is a native of Sweden. 10. A. mollis is hairy and yellowish, with pale elytra, and three belts. It is a native of Europe. 11. A. Pennsylvanicus is black, with red elytra, a black belt round the middle, and another towards the apex of the elytra. It is a native of Philadelphia. 12. A. sipylus is green, with a hairy breast, and a double yellow belt upon the

3. A. Surinamensis has a double inden-
two teeth, in the top of the elytra.

M'PER, *v.* & *adj.*
PERATE,
PERANCE,
PERLY.
Lat. of the middle ages, *attempero.* Lat. *temperare,* to abate, the predomi-
lities of a thing. To moderate, to ac-
ate.

should love his wyf by discretien, patiently
prely, and than is she as though it were his
Chaucer. The Persones Tale, v. ii. p. 363.

joyous birds shrouded in cheerful shade,
otes unto the voice *attempered* sweet,
gel-call, soft trembling voices made,
instruments' divine respondence meet.
Spenser.

archy, where is no nobility at all, is ever a
absolute tyranny, as that of the Turks; for
ttempers sovereignty, and draws the eyes of
e somewhat aside from the line royal: but
raries they need not. *Bacon's Essays*.

nius! let arts of gods and heroes old,
er'd to the lyre, your voice employ. *Pope.*

must be proportioned and *attemperate* to the
if it exceed that temper and proportion, it
a tumour and tympany of hope,
Hammond's Pract. Catechism.

Attemper'd suns arise,
am'd, and shedding oft thro' lucid clouds
g calm. *Thomson.*

the midst a form divine!
eye proclaims her of the Briton line;
lion-port, her awe-commanding face,
mper'd sweet to virgin-grace.
Gray's Bard.

MPT, *v.* & *n.*
PT'ER,
PT'ABLE,
TATE.
Fr. *attenter;* from *tenter,* which is from the Latin *tentare,* to try. To make experi-
o make an effort to accomplish an ob-
undertake.

ntleman, vouching his to be more fair, vir-
r, and less *attemptable*, than the rarest of
. *Shakspeare.*

o. Our doubts are traitors,
ake us lose the good we oft might win
ring to *attempt*. *Id. Measure for Measure.*

I am afraid, they have awak'd,
not done; th' *attempt*, and not the deed,
s us. *Id. Macbeth.*

He flatt'ring his displeasure,
t me behind; got praises of the king,
him *attempting*, who was self-subdu'd. *Id.*

uld have cry'd; but, hoping that he dreamt,
eat tied his tongue, and stopp'd th' *attempt*.
Dryden.

e always prepared to receive an enemy; we
g live in peace and quietness, without any
upon us. *Bacon.*

nevertheless *attempted* to send unto you,
newing of brotherhood and friendship.
1 *Mac.* xii. 17.

Who, in all things wise and just,
'd not Satan to *attempt* the mind
, with strength entire and free-will arm'd.
Milton.

Son of God, with godlike force endu'd,
t th' *attempter* of thy Father's throne. *Id.*

no factors, for glory or treasure; but dis-
attempters, for the universal good.
Glanville's Scepsis.

Fools only make *attempts* beyond their will,
A wise man's pow'r's the limit of his will.
Congreve.

He that would succeed in a project of gain, must never *attempt* to gain too much; and upon proper occasions, must know how to lose.
Hawkesworth's Telemachus.

A lion of Numidia, that hunger has made more furious, rushes among the flocks; he kills and tears to pieces without resistance; and the shepherds, instead of *attempting* to defend their sheep, fly with terror and trepidation to preserve themselves. *Id.*

ATTEND',
ATTEND'ANCE,
ATTEND'ANT, *n.* & *adj.*
ATTEND'ER,
ATTENT',
ATTEN'TION,
ATTEN'TIVE,
ATTEN'TIVELY,
ATTEN'TIVENESS.
Lat. *attendo;* from *ad* and *tendo*, to stretch to or towards. To direct the mind to; to look to what one is about; to have the faculties engaged or the affair in hand; to wait.

The fifth had charge, sick persons to *attend;*
And comfort those, in point of death which lay.
Spenser.

He that goeth about to persuade a multitude, that they are not so well governed as they ought to be, shall never want *attentive* and favourable hearers.
Hooker's Ec. Polity.

I will be returned forthwith: dismiss your *attendant* there; look it be done! *Shakspeare. Othello.*

England is so idly king'd,
Her sceptre so fantastically borne;
That fear *attends* her not. *Id.*

I'm never merry, when I hear sweet musick:
The reason is, your spirits are *attentive.*
Id. Merchant of Venice.

My pray'rs and wishes always shall *attend*
The friends of Rome. *Addison's Cato.*

A vehement, burning, fixed, pungent pain in the stomach, *attended* with a fever. *Arbuthnot on Diet.*

I saw most of them *attentive* to three Sirens, distinguished by the names of Sloth, Ignorance, and Pleasure. *Tatler.*

The diligent pilot, in a dangerous tempest, doth not *attend* the unskilful words of a passenger. *Sidney.*

The gypsies were there,
Like lords to appear;
With such their *attenders*,
As you thought offenders. *Ben Jonson.*

Now mine eyes shall be open; and mine ears *attent* unto the prayer, that is made in this place.
2 *Chron.* vii. 15.

What can then be less in me, than desire
To see thee, and approach thee, whom I know
Declar'd the Son of God; to hear *attent*
Thy wisdom, and behold thy godlike deeds?
Milton.

Other suns perhaps,
With their *attendant* moons, thou wilt descry,
Communicating male and female light.
Id. Paradise Lost.

Unknown sins have their guilt and shame, and are justly *attended* with known punishments.
Hall's Contemplations.

We all are never weary of receiving, soon weary of *attending*. *Id.*

At length her lord descends upon the plain
In pomp *attended* with a numerous train. *Dryden.*

Hush'd winds the topmast branches scarcely bend,
As if thy tuneful song they did *attend*. *Id.*

Plant anemonies after the first rains, if you will have flowers very forward: but it is surer to *attend* till October. *Evelyn.*

With these four more of lesser fame,
And humble rank *attendant* came;
Hypocrisy with smiling grace,
And Impudence with brazen face,
Contention bold with iron lungs,
And Slander with her hundred tongues. *Moore.*

He [Termosiris priest of Apollo] related past events with such force of expression that they seemed to be present; and with such comprehensive brevity, that *attention* was not wearied; and he foresaw the future by a sagacity that discovered the true characters and dispositions of mankind, and the events which they would produce. *Hawkesworth's Telemachus.*

Attention has also been defined, a due application of the ear, or the eye, as well as of the mind, to any thing said or done, in order to acquire a knowledge thereof.

Attention of mind is not properly an act of the understanding, but rather of the will, by which it calls the understanding from the consideration of other objects, and directs it to the thing in hand. Nevertheless, our attention is not always voluntary; an interesting object seizes and fixes it beyond the power of control. Attention, in respect of hearing, is the stretching or straining of the membrana tympani, so as to make it more susceptible of sounds, and better prepared to catch even a feeble agitation of the air: or, it is the adjusting the tension of that membrane to the degree of loudness or lowness of the sound to which we are attentive. According to the degree of attention, objects make a stronger or weaker impression. Bacon, in his Natural History, observes, that 'Sounds are meliorated by the intension of the sense, where the common sense is collected most to the particular sense of hearing, and the sight suspended. Therefore sounds are sweeter, as well as greater, in the night than in the day; and I suppose they are sweeter to blind men than to others; and it is manifest, that between sleeping and waking, when all the senses are suspended, music is far sweeter than when one is fully waking.' Attention is requisite even to the simple act of seeing: the eye can take in a considerable field at one look; but no object in the field is seen distinctly but that singly which fixes the attention: in a profound reverie that totally occupies the attention, we scarce see what is directly before us. In a train of perceptions, no particular object makes such a figure as it would do singly and apart: for, when the attention is divided among many objects, no particular object is entitled to a large share. Hence, the stillness of night contributes to terror, there being nothing to divert the attention. In matters of slight importance, attention is mostly directed by the will; and, for that reason, it is our own fault if trifling objects make any deep impression. Had we power equally to withhold our attention from matters of importance, we might be proof against any deep impression. But our power fails us here; and, while our attention is thus forcibly attached to one object, others will solicit it in vain.

ATTENUANTS, or Attenuating Medicines, are such as subtilise and break the humors into finer parts; and thus dispose them for motion, circulation, excretion, &c. They are of extensive use in physic, and come under different denominations, according to the different effects they produce. Thus, when
and viscid juices not only stagnate in th
of the vessels, but obstruct the minute
the viscera and emunctories, these med
their inciding and attenuating qualities,
the humors, and remove the obstructi
which reason they are not improperly c
rients. Attenuants produce so great a
effects, that it is proper we should be
quainted with their several kinds, as app
to the several disorders, and know w
prove most serviceable in each. Acc
Hoffman, the dissolving and attenuating
crudities in the stomach and primæ vi
answered by the roots of arum, acorus,
ginger, and the like; as also by sal a
vitriolated tartar, the fixed alkaline salts
simple or dulcified spirit of salt. Wh
and unconcocted humors are to be eva
stool, this intention is very well answer
neutral salts, as the salts of the purgin
and the sal polycrestum, with a sufficie
tity of a watery vehicle. When viscid
occasioning disorders of the breast, are
tenuated and expectorated, the intentio
effectually answered by elecampane a
roots; and by gum ammoniacum, myrr
jamin, and balsam of Peru; or by re
tartar, oxymel of squills, a solution
eyes in distilled vinegar, and the syr
bacco, and the like. When the mass of
tainted by thick and tenacious sordes,
emunctories are by that means obstru
the humors contaminated by a saline su
and scorbutic dyscrasy, the most effic
the attenuants are the horse-radish, scur
water and garden cresses, mustard, gu
niac, benjamin, myrrh, the oil of fixed
of tartar per deliquium, solutions of ni
of sal ammoniac, salt of wormwood wi
juice, and the salts of the medicinal
When grumous or coagulated blood, o
by contusions or blows, is to be attenu
again dissolved, the intention is sure
swered by the roots of Solomon's Seal,
and crabs' eyes, the regenerated tartar,
prepared with antimony. And in cas
the lymph has acquired a preternatural
and viscidity, especially if from a vener
the curative intention is most effectu
swered by guaicum, the acrid tinctur
mony, calomel, Æthiop's mineral, and
which, when skilfully used, are of sing
cacy in dissolving and attenuating th
juices impacted in the glands of the live

ATTEN'UATE, *v.* & *n.* } Lat. *att*
Attenua'tion } thin; from
tenuis, to thin; from *tendo*, to stretch.
out in length or superficial extent; to
thin; to dilate.

Chiming with a hammer upon the outside
the sound will be according to the inward
the bell; whereas the elision, or *attenuati*
air, can be only between the hammer and t
of the bell.

Vivification ever consisteth in spirits
which the cold doth congeal and coagulate.

The ingredients are digested and *attenuate*
they are stirred and constantly agitated by

ch concernment too is drink and food,
ssate or *attenuate* the blood.

Dryden's Translation of Lucretius.

uation is defined more generally by
the dividing or separating of the mi-
s of any body, which before, by their
exus or implication, formed a more
s mass. Accordingly, among alche-
sometimes find the word used for pul-
, or the act of reducing a body into an
e powder, by grinding, pounding, or

uation, in medicine, the lessening the
quantity of the morbific matter.

RBURY (Bishop Francis), son of Dr.
erbury, was born at Milton in Buck-
ire, in 1662; educated at Westminster,
e elected to Christ-Church, in Oxford,
soon distinguished himself by his ge-
1687 he was made M.A., when he
imself in the controversy with the
vindicated Luther in the strongest
nd displayed an uncommon fund of
enlivened with great vivacity. In
narried Miss Osborn, a lady of great
ut moderate fortune. About 1690 he
rs, and in 1691 was elected lecturer of
s church in London, and preacher at
chapel. He was soon after appointed
o king William and queen Mary. The
ook in the controversy against Bentley,
authenticity of Phalaris's Epistles) is
ly ascertained. In 1700 a still larger
tivity opened, in which Atterbury was
our years with Dr. Wake (afterwards
o of Canterbury), and others, concern-
Rights, Powers, and Privileges of Con-
;' in which he displayed so much
nd zeal for the interests of his order,
lower house of Convocation returned
thanks, and the university of Oxford
nted him with the degree of D.D.
9, 1700, he was installed archdeacon
. The same year he was engaged,
other learned divines, in revising an
edition of the Greek Testament, with
holia, collected chiefly from the fathers,
rchdeacon Gregory. At this period he
lar, as preacher at the Rolls chapel;
which had been conferred on him by
Trevor, in 1698, when he resigned
. Upon the accession of queen Anne,
Dr. Atterbury was appointed one of
ains; and in October 1704, was ad-
the deanery of Carlisle. About two
er this, he was engaged in a dispute
Hoadly, concerning the advantages of
ith regard to the present life; occa-
y his sermon, preached August 30,
the funeral of Mr. Thomas Bennet, a
. In 1707 Sir Jonathan Trelawney,
f Exeter, appointed him one of the
sidentiaries of that church. In 1709
ngaged in a fresh dispute with Mr.
concerning 'Passive Obedience;' oc-
by his Latin sermon, entitled 'Concio
n Londinensem, habita in Ecclesia S.

In 1710 came on the famous trial of
everell, whose remarkable speech on
that occasion was generally supposed to have been drawn up by our author, in conjunction with Dr. Smalridge and Dr. Freind. The same year Dr. Atterbury was unanimously chosen prolocutor of the lower house of Convocation, and had the chief management of affairs in that house. May 11, 1711, he was appointed by the convocation one of the committee for comparing Mr. Whiston's doctrines with those of the church of England; and in June following, he had the chief hand in drawing up 'A Representation of the present State of Religion.' In 1712 he was made dean of Christ Church, notwithstanding the strong interest and warm applications of several great men in behalf of his competitor, Dr. Smalridge. In the beginning of June, 1713, the queen advanced him to the bishopric of Rochester, with the deanery of Westminster in commendam. He was confirmed July 4, and consecrated at Lambeth next day. The death of the queen, in 1714, put an end to all farther hopes of advancement; for the new king treated him with great coolness, doubtless aware of either the report or the fact of his offer, on the death of Anne, to proclaim the Pretender in full canonicals, if allowed a sufficient guard. This dislike operated like oil on the inflammable mind of Atterbury, who not only refused to sign the loyal declaration of the bishops in the rebellion of 1715, but suspended a clergyman for lending his church for the performance of divine service to the Dutch troops brought over to serve against the rebels. Not content with a constitutional opposition, he entered into a correspondence with the Pretender's party, in favor of the dispossessed family; for which offence he was apprehended in August 1722, and committed to the Tower; and in the March following a bill was brought into the House of Commons, for the infliction of pains and penalties. This measure, which on constitutional grounds can never be defended, and which indeed was supported chiefly on the urgency of the particular time and case, met with considerable opposition in the Lords, and was resisted with great firmness and eloquence by the bishop, who maintained his innocence with his usual acuteness and dexterity. His guilt however has been tolerably well proved by documents since published; and nothing more is necessary to warrant a confirmed moral distaste to his character, than the contemplation of such a scene of smooth dissimulation and hypocrisy. By this bill the bishop was deprived and outlawed, and no British subject was permitted to visit him abroad, without the king's sign manual; which however was not refused to his relatives.

On the 27th, this prelate having that day taken leave of his friends, who, from the time of passing the bill against him to the day of his departure, had free access to him in the Tower, embarked on board the Aldborough man of war, and landed the Friday following at Calais. When he went on shore, having been informed that lord Bolingbroke, who, after the rising of the parliament, had received the king's pardon, was arrived at the same place on his return to England, he said, with an air of pleasantry, 'Then I am exchanged!' When bishop Atterbury first entered upon his banishment, Brussels was the place destined for his residence; but he was compelled to leave that place, and retire to Paris. He next changed his abode for Montpelier, in 1728; and, after residing there about two years, returned to Paris, where he died February 15, 1731. As a composer of sermons, Dr. Atterbury still retains the highest reputation; his periods are easy and elegant, his style flowing and beautiful; but as a critic or disputant, he is rather dexterous than accurate, and rather popular than profound.

Atterbury (Dr. Lewis), eldest son of the Dr. and brother to the bishop, was born at Caldecot, in Bucks, in 1656; educated at Westminster, and sent to Oxford in 1674. In 1679 he entered into orders, and commenced A. M. in 1680; in 1683 he was made chaplain to Sir W. Pritchard; in 1684 rector of Symel; in 1687, L.L. D. and in 1691 lecturer of St. Mary-at-Hill, London. In 1695 he was elected preacher at Highgate, and was appointed one of the six preaching chaplains to the princess Anne of Denmark, at Whiteball and St James's; in which place he was continued after she became queen, and during part of the reign of George I. In 1707 the queen appointed him rector of Shepperton, and in March 1709, the bishop of London collated him to the rectory of Hornsey. He died at Bath, of a paralytic disorder, in 1731. He published, during his life, 2 vols. of Sermons, and four occasional ones, besides other pieces. He was remarkably benevolent and charitable. While he resided at Highgate, observing that the poor in that neighbourhood were much at a loss for medical advice, he studied physic, and practised it gratis among them: he also gave £10 annually to a teacher, to instruct young girls at Newport Pagnel, and burdened his estate with this annual payment for ever. He left 200 volumes of pamphlets to the library of Christ Church, Oxford.

ATTES, in fabulous history, a son of Calaus of Phrygia, who was born impotent. The worship of Cybele was introduced among the Lydians by him, after which he was highly honored by the goddess. His success awakened a jealousy in Jupiter, and he sent a wild boar to lay waste the country, that Attes might be destroyed.

ATTEST', *v.* & *n.*
Attest'er,
Attesta'tion.
} Lat. *attestor; ad* and *testor*, to call to witness. To corroborate or strengthen by witness, i. e. by one who has had the evidence of one or more of the senses.

> With the voice divine
> Nigh thunderstruck, th' exalted man, to whom
> Such high *attest* was giv'n, a while survey'd
> With wonder. *Paradise Regained.*

> Many particular facts are recorded in holy writ, *attested* by particular pagan authors. *Addison.*

> We may derive a probability, from the *attestation* of wise and honest men, by word or writing; or the concurring witness of multitudes, who have seen and known, what they relate. *Watts.*

> Prodigious actions may as well be done
> By weaver's issue, as by prince's son.
> This arch-*attestor* of the publick good,
> By that one deed ennobles all his blood.
> *Dryden's Absalom and Achitophel.*

ATTHIS, a daughter of Cranaus, the second king of Athens. According to Apollodorus she gave her name to Attica.

ATTIC, any thing relating to Attica, or Athens, or any thing peculiarly elegant or excellent.

Attic Base, a peculiar kind of base used by the ancient architects in the Ionic order; and by Palladio, and some others, in the Doric.

Attic Order, or **Attics**, in architecture, a kind of order, after the manner of a pedestal, raised upon another larger order, by way of crowning, or to finish the building. See Architecture, Index.

Attic Salt, a delicate, poignant kind of wit, peculiar to the ancient Athenians. The term is applied to any similar piece of humor in modern writings.

Attic Story, in architecture, a story in the upper part of a house, where the windows are usually square.

Attic Witness, a witness incapable of corruption.

ATTICA, an ancient state of Greece, situated along the north coast of the gulph of Saron, bounded on the west by Megara, mount Cithæron, and part of Bœotia; on the north by the gulf of Euripus (now called Stretto di Negroponte, or the Strait of Negropont), and the rest of Bœotia; and on the east by the Euripus. It extended in length from north-west to south-east, about sixty miles; its breadth from north to south was fifty-six, decreasing as it approached the sea. The soil of this country was naturally barren and craggy, though by the industry of its inhabitants it produced all the necessaries of life. On this account, Attica was less exposed to invasions than other more fertile countries; and hence, it preserved its ancient inhabitants, beyond all the other kingdoms in its neighbourhood; so that they were reputed to be the spontaneous productions of the soil; and as a badge of this, Thucydides tells us, they wore golden grasshoppers in their hair.

The principal mountains of Attica were Laurium, celebrated for its silver mines, and situated near the Sunian promontory; Pentelicus, famous for its quarries of white marble; and Hymettus, near Athens, remarkable for the abundance and fineness of its honey. Other mountains mentioned in history, are Ægialeus, Brilessus, Icarius, Lycabettus, and Parnethus. Its principal rivers were the Cephisus, Eridanus, and Ilissus. Although the mountainous character of the country rendered it unpromising and sterile for grain generally, barley was produced in abundance; and Aristotle observes that the fruits of Attica had a peculiar sweetness. The culture of the olive tree was protected by law, and a fine of 200 drachmæ (upwards of £8 sterling) was paid by any person who rooted up on his grounds more than two trees in a year, unless for the service of the gods. The olives called colymbades, considered larger and of richer flavor than any other, retain their name to this day, and were, until the late civil wars, monopolised for the personal use of the grand signior.

The chief cities of Attica were Athens, the capital. See Athens. Next to it Eleusis, situated on the same gulf, near the coasts of Megara;

o that Rhamnus, famed for the temple
araus, and the statue of the goddess
sculptured by Phidias, from a block of
rble, which the Persians had brought
assist in erecting a trophy of their pro-
tory. It was ten cubits high, and was
with the name of his favorite pupil
us. Nor ought we to omit to mention
of Marathon, ten miles north-east of
mortalised by the victory gained there
les over the Persians. On the plain
ttle the Athenians erected small co-
which the names of those warriors
were inscribed. A monument after-
ed to Miltiades himself, was set apart,
stance from the rest: in the intervals
hese columns were trophies, bearing
f the Persians.

was divided into ten tribes, called
d these again were subdivided into
ghs, or δημοι. The inhabitants were
lasses: 1. Citizens, πολιται; whose
nderwent little change from the time
, and averaged about 20,000. They
t, from a certain property, to vote in
l assembly; about 60,000 others were
ithout this privilege. Those who
m parents both of whom were Athe-
ns, were considered freeborn, though
ly the privilege was extended to such
parent only of this class. The honor
rred on foreigners by a vote of the
ified at two solemn assemblies; at the
which it was requisite that 6,000 citi-
d be present. But no one, except a
Athenian, could hold an archonship.
ers settled in Attica, and enrolled in
registers, μετοικοι. They were pro-
the state; but were not permitted to
ublic office. Each μετοικος selected a
his protector, προστατης; who stood
ch in the same relation as the Roman
lid to his cliens. They paid an an-
te to the state of twelve drachmæ
e shillings), and in default of payment
sold as slaves. Their number (males
he time of Demetrius of Phalerum,
) was 10,000. 3. Slaves, δουλοι, who,
bered at the same time, amounted to
The agricultural, mining, and menial
performed by them; as well as the
t of that of the public works, and of
nufactures. The entire population of
tica may be taken at about half a mil-
arly 900 to a square mile; about one-
that of Middlesex. For the political
this interesting country, including the
its recent struggles for liberty, see
Greece.

ISE, }
M, } Gr. Αττικιζω, to speak or
} write after the Attic dialect.
L. }

ile they acted and overacted, among other
lars, I was a spectator; they thought
gallant men, and I thought them fools;
port, and I laughed; they mispronounced,
ked; and to make up the *atticism*, they
d I hist. *Milton.*

If any will still excuse the tyrant for *atticising* in those circumstances, it is hard to deny them the glory of being the faithfullest of his vassals.

Bentley. Dissertation on Phalaris.

ATTICUS (Titus Pomponius), one of the most remarkable characters of ancient Rome. He managed himself with such address, that he preserved the esteem and affection of all parties. He sent money to the younger Marius, and yet was a favorite with Sylla. He pleased Cæsar without offending Pompey. He sent supplies to Brutus, while he was doing kind offices to Antony. His strict friendship with Cicero did not hinder him from having great intimacy with Hortensius; and in the contests between Antony and Augustus, he preserved the regard of both. The contests at Rome between the parties of Sylla and Marius, however, induced him to retire to Athens, where he gained the affection of the Athenians so much, that the day he left them was a day of mourning. He was very fond of learning, and kept several librarians and readers. He might have obtained the most considerable posts in the republic; but chose rather not to meddle, because in the corruption and faction which then prevailed, he could not discharge them according to the laws. He wrote annals, which Cicero praises, as having been of great use to him. He married his daughter to Agrippa, and died at the age of 77.

Atticus (Herodes), a celebrated orator of antiquity, was born at Marathon. His lectures on elocution were heard with such applause, that he was sent for by Titus Antoninus, to instruct Marcus Aurelius, and Lucius Verus. He was honored with the consulship, and other high offices. He generously erected an aqueduct at Troas, of which he had been made governor, and some other public buildings in different places of the empire, equally useful and magnificent. He was particularly liberal as a benefactor to Athens. He died at Marathon, at the age of 76.

Atticus, patriarch of Constantinople, was by birth an Armenian, and flourished in the fifth century. In A.D. 406, he condemned John Chrysostom, by which he got possession of the patriarchate; but Pope Innocent I. being offended at his proceedings, excommunicated him. However, when Chrysostom died, he was allowed to retain his seat. He died in 427.

ATTILA, king of the Huns, lived in the fifth century. He was surnamed 'the Scourge of God,' a title which all offensive conquerors have more or less merited, though none but Attila is said to have assumed and gloried in it. He may justly be ranked among the greatest conquerors, for there was scarcely any province in Europe which did not feel the weight of his victorious arms. Attila deduced his descent from the ancient Huns, who had formerly contended with the monarchs of China. His features, according to the observation of a Gothic historian, bore the stamp of his national origin; and the portrait of Attila exhibits the genuine deformity of a modern Calmuck; a large head, a swarthy complexion, small, deep-seated eyes, a hooked nose, a few hairs in the place of a beard, broad shoulders, and a short square body, of nervous strength, though of a disproportioned form. The haughty demeanor of this tyrant expressed the idea he entertained of his superiority above the rest of mankind; and he had a custom of fiercely rolling his eyes, as if he wished to enjoy the terror which he inspired. Yet this savage hero was not inaccessible to pity; his suppliant enemies might confide in his assurance of peace or pardon; and he was considered by his subjects as a just and indulgent master. He delighted in war; but, after he had ascended the throne in a mature age, his head, rather than his hand, achieved the conquest of the north; and the fame of an adventurous soldier was usefully exchanged for that of a prudent and successful general. The effects of mere personal valor are indeed so inconsiderable, that victory, even among barbarians, depends on the degree of skill, with which the passions of the multitude are guided for the service of a single man. The arts of Attila were skilfully adapted to his age and country. It was natural that the Scythians should adore the god of war; but as they were incapable of forming either an abstract idea, or a corporeal representation of him, they worshipped him under the symbol of an iron scymitar. One of the shepherds of the Huns perceived that a heifer, who was grazing, had wounded herself in the foot; and curiously followed the tract of the blood, till he discovered among the long grass, the point of an ancient sword; which he dug out of the ground, and presented to Attila. That artful prince accepted with pious gratitude this celestial favor; and, as the rightful possessor of the sword of Mars, asserted his divine and indefeasible claim to the dominion of the earth. Thus this favorite of Mars acquired a sacred character, which rendered his conquests easy and permanent; and the barbarian princes confessed, in the language of devotion or flattery, that they could not presume to gaze with a steady eye on the divine majesty of the king of the Huns. His brother Bleda, who reigned over a considerable part of the nation, was compelled to resign his sceptre and his life. Yet even this cruel act was attributed to a supernatural impulse; and the vigor with which Attila wielded the sword of Mars convinced the world that it had been reserved alone for his invincible arm. But the extent of his empire affords the only remaining evidence of the number and importance of his victories; and the Scythian monarch, however ignorant of the value of science and philosophy, might lament that his illiterate subjects were destitute of the art which could perpetuate the memory of his exploits. Attila, indeed, may claim the title of supreme and sole monarch of the barbarians. He alone, among the conquerors of ancient and modern times, united the two mighty kingdoms of Germany and Scythia. Thuringia, which stretched beyond its actual limits as far as the Danube, was in the number of his provinces: he interposed, with the weight of a powerful neighbour, in the domestic affairs of the Franks; and one of his lieutenants chastised, and almost exterminated, the Burgundians of the Rhine. He subdued the islands of the ocean, the kingdoms of Scandinavia, encompassed and divided by the waters of the Baltic; and the Huns derived a tribute of furs from that northern region, which has been protected from all other conquerors by the severity of the climate, and the courage of the natives. Towards the east, it is difficult to circumscribe the dominion of Attila over the Scythian deserts; yet we may be assured that he reigned on the banks of the Volga; that he was dreaded, not only as a warrior, but as a magician; that he vanquished the khan of the formidable Geougen; and that he sent ambassadors to negociate an equal alliance with the empire of China. In the proud review of the nations who acknowledged the sovereignty of Attila, and who never entertained during his lifetime the thought of a revolt, the Gepidæ and the Ostrogoths were distinguished by their numbers, their bravery, and the personal merit of their chiefs. Ardaric, king of the Gepidæ, was the faithful and sagacious counsellor of the monarch; who esteemed his intrepid genius, whilst he loved the mild and discreet virtues of the noble Walamir, king of the Ostrogoths. The crowd of vulgar kings, who served under the standard of Attila, were ranged in the submissive order of guards and domestics round the person of their masters. They watched his nod; they trembled at his frown; and at the first signal of his will they executed without hesitation his absolute commands. In time of peace the dependent princes with their national troops attended the royal camp in regular succession; but when Attila collected his military force he was able to bring into the field an army of five, or according to some, 700,000 barbarians. See Huns. The circumstances attending Attila's death (about A. D. 453) were remarkable; from the festive throng, which celebrated his nuptials with a beautiful virgin named Ildico, he retired late to bed, oppressed with wine, and during the night a blood-vessel burst and suffocated him. In the morning the bride was found by the bed-side, bewailing his death and her own danger. His body was exposed in the plain, while the Huns marched round it in martial order, singing funeral songs to his praise; and was afterwards enclosed in coffins of gold, silver, and iron, and interred privately in the night. To prevent the violation of his remains, by the discovery of his grave, the slaves who were employed on the occasion were put to death.

ATTILATUS Equus, in old law Latin, a horse dressed in his harness, for the plough or cart.

ATTILUS, in ichthyology, a river-fish, of the sturgeon kind, called by some adello, adano, and adeno. It grows to a very large size, and when full grown, casts its scales, and never has any fresh ones, but remains perfectly smooth; in which it differs from the common sturgeon. But it seems not to differ in any essential point from the hussu germanorum. It is an eatable fish, but is greatly inferior in taste to the sturgeon.

ATTINGA, in ichthyology, a species of the diodon.

ATTIR'E, *v.* & *n.*
Attir'ing,
Attou'r.
Of uncertain derivation. It may be observed, without deciding the question of etymology, that the tiara was an head-dress worn by Phrygian and Persian priests and kings

ces. Hence the word is found in Greek
nd is probably derived from the Persic—

rygia vestitur bucca tiara. *Juvenal.*

crowned covering for the head, still
the natives of Persia, in contradistinc-
e low turban of the Turks, is worthy of
The word is sometimes applied to the
f bishops. The French *attirer*, is to
attirail, is the apparatus necessary to
ge or adorning.

likewise your gentle breast inspire,
veet infusion; and put you in mind
proud maid, whom now those leaves *attire*,
Daphne. *Spenser.*

more disgrace to Scripture, to have left
, to be ordered by the church; than for
have left it to the wit of man, to devise his
. *Hooker.*

an shall be the queen of all the fairies;
ttired in a robe of white.
Shakspeare. Merry Wives of Windsor.

th the linen mitre shall he be *attired*.
Lev. xvi. 4.

at, the Roman *attire* grew to be in account,
wn to be in use among them.
Davies on Ireland.

Now the sappy boughs
Attire themselves with blooms. *Philips.*

herds with milk, whose fields with bread,
e flocks supply him with *attire*,
trees in summer yield him shade,
nter fire. *Pope's Ode on Solitude.*

, in hunting; the attire of a stag, if
onsists of bur, pearls, beam, gutters,
r-antler, royal, fur-royal, and crotches;
of a buck, of the bur, beam, brow-
vancer, palm, and spellers.

ET (John Denis), a French jesuit and
was born at Dole, in Franche Comté,
and died in 1768 at Pekin, whither he
panied the mission. He was employed
peror Kien Long to paint many battle-
th which he was so much pleased, that
him the dignity of a mandarin, and
eclined the honor of the title, he granted
venues of the post.

TUDE. Ital. *attitudine*. Supposed to
ted from low Latin *aptitudo*, from *apto*,
term used by the Italians in the art of
denote the gesture fitted for the display
beauty, or other quality of form; ex-
osture.

would have taken his opinion, upon the
attitude of a figure. *Prior's Ded.*

ere famous originals, that gave rise to
th the same air, posture, and *attitudes*.
Addison.

M, in ancient geography, a promon-
he north-west of Corsica, now called
Acciuolo.

BOROUGH, a town in Norfolk, once
of the county, on the road from Thet-
rwich, about twelve miles from each,
-three from London. It is also called
Market, Thursday.

K, a river of Asia, which rises in the
mountains, north of Hindostan, and
y Cabul, falls into the Indus. By a
veen Kouli Khan, Schah of Persia, and the Great Mogul, it was made the boundary between Persia and India.

Attock, Atac, a limit, a town in the province of Lahore, on the east side of the Indus, which is here, in the month of July, from three-fourths to one mile across. Lat. 33° 6′ N., long. 71° 15′ E. The ancient name of Attock, to this day, is Varanas, or Benares; but it is more generally known by the name of Attock. The fortress was built by Acber, A. D. 1581.

'It is remarkable,' says Mr. Hamilton, 'that the three great invaders of Hindostan, Alexander, Tamerlane, and Nadir Shah, in three distant ages, and with views and talents extremely different, advanced by the same route, with hardly any deviation. Alexander had the merit of discovering the way: after passing the mountains he encamped at Alexandria Paropamisana, on the same site with the modern city of Candahar; and having subdued or conciliated the nations seated on the north west-bank of the Indus, he crossed the river at Taxila, now Attock, the only place where the stream is so tranquil that a bridge can be thrown over it.'

ATTOLLENS, in anatomy, an appellation given to several muscles otherwise called levatores and elevatores.

ATTONITUS Morbus, Attonitus Stupor, an apoplexy; also being planet-struck or blasted.

ATTOR'N,
Attor'ney, *v.* & *n.*
Attor'neyship.
Fr. *attourner*; *attornare*, Du Fresne, to turn over to, or transfer; to perform service. Ang.-Sax. tyrnan, to turn.

As I was then,
Advertising and holy to your business,
Nor changing heart with habit; I am still
Attornied to your service. *Shakspeare.*

But marriage is a matter of more worth,
Than to be dealt in *attorneyship*. *Id.*

I will attend my husband! it is my office;
And will have no *attorney* but myself;
And therefore let me have him home. *Id.*

I am a subject,
And challenge law: *attorneys* are deny'd me;
And therefore personally I lay my claim,
To mine inheritance. *Id.*

The king's *attorney* on the contrary,
Urg'd on examinations, proofs, confessions. *Id.*

Despairing quacks with curses fled the place;
And vile *attorneys*, now an useless race. *Pope.*

An *attorney* at law answers to the procurator, or proctor, of the civilians and canonists. And he is one who is put in the place, stead, or turn of another, to manage his matters of law.
Blackstone's Commentaries.

ATTORNARE Personam, in common law, to depute a representative, or proxy, to appear and act for another.

Attornare Rem, to turn over money and goods, that is, to assign and appropriate them to certain persons or uses.

ATTORNATO Faciendo, vel Recipiendo, in common law, a writ to command a sheriff, or steward, to receive and admit an attorney to appear for the person that oweth suit of court, to a county or hundred. Every person that owes suit to the county court, court-baron, &c. may make an attorney to do his suit.

Attorney at Law is one who is put in the place, stead, or turn of another, to manage his matters at law. Formerly every suitor was obliged to appear in person, to prosecute or defend his suit (according to the old Gothic constitution,) unless by special licence under the king's letters patent. This is still the law in criminal cases; and an idiot cannot to this day appear by attorney, but in person; for he hath not discretion to enable him to appoint a proper substitute; and, upon his being brought before the court in so defenceless a condition, the judges are bound to take care of his interests, and they shall admit the best plea in his behalf that any one present can suggest. But, as in the Roman law, when it was in use, one person could not act in the name of another; yet, as this was attended with no small inconvenience, men were allowed to litigate by procurators; so with us, on the same principle of convenience, it is now permitted in general, by divers ancient statutes, whereof the first is statute West. 2, c. 10, that attorneys may be made to prosecute or defend any action in the absence of the parties to the suit. Attorneys are now, therefore, formed into a regular profession; they are admitted to the execution of their office by the superior courts of Westminster hall; are in all points officers of the respective courts in which they are admitted; and as they have many privileges on account of their attendance there, so they are peculiarly subject to the censure and animadversion of the judges. No man can practise as an attorney in any of these courts, but such as is admitted and sworn an attorney of that particular court. To practise in the court of chancery, it is also necessary to be admitted a solicitor therein: and by the statute 22 Geo. II. c. 49, no person shall act as an attorney in the court of quarter sessions, but such as has been regularly admitted in some superior court of record. So early as the statute 4 Hen. IV. c. 18, it was enacted that none should be admitted attorneys but such as were virtuous, learned, and sworn to do their duty. And many subsequent statutes have laid them under farther regulations.

By 2 Geo. II. c. 23, all attornies shall be sworn, administered, and enrolled, before they are allowed to sue writs in the courts of Westminster; and, after the 1st of December, 1730, none shall be permitted to practise but such as have served a clerkship of four years to an attorney, and they shall be examined, sworn, and admitted in open court. Any person duly admitted a solicitor, may be admitted an attorney, and vice versa. An attorney's bill may be taxed, and if it be reduced a sixth part, he is to pay the costs of taxation.

By 34 Geo. III. c. 14, every person bound as clerk to an attorney of the courts at Westminster, pays £100 stamp duty. After admission in one court, no farther duties are required for the others. Nor are farther duties required for new contracts with new masters. An attorney is privileged from being pressed as a soldier, but he may be drawn for the militia. He need not serve any parochial or borough office against his will. They may sue and be sued only in their own courts. Special bail is not required of them as defendants; as plaintiffs they may demand it. Payment to the attorney is payment to the principal. An attorney has a lien on the money recovered for his client, and he
tain the amount of his bill. Attornie
summarily punished by an attachmen
being struck off the rolls of the cour
practice, fraud, or corruption; and so
(in order to be called to the bar) they a
off the roll on their own application.

Attorney General, a great law-offic
crown, whose business is to exhibit infor
and prosecute for the crown, in matters
also to file bills in the exchequer, for a
concerning the king in inheritance or
and others may bring bills against th
attorney. His proper place in court, u
special matters of a criminal nature, wh
attendance is required, is under the j
the left hand of the clerk of the crown;
is only upon solemn and extraordinary oc
for usually he does not sit there, but wi
bar in the face of the court. The quee
is also privileged to have an attorney-g

Attorney of the duchy court
caster is the second officer in that court
as assessor to the chancellor of the cour

ATTORNMENT, attourner, old Fr
turn over to; under the feudal system, th
of a tenant to his lord's alienation of the s
thus securing him against having his fe
services transferred to another without h
ledge. There was a reciprocal obligatio
tenant to obtain the lord's consent to an
tion.

ATTRACT' *v.* & *n.*
Attractabil'ity,
Attrac'tion,
Attrac'tive, *n.* & *adj.*
Attrac'tively,
Attrac'tiveness,
Attrac'tor.

Lat. *attrah*
tum, to d
from *ad* an
from *trans*
carry over,
To draw
over; to e
real but subtle agency in drawing an
its subject; to conciliate, to win the
gain the affections.

Setting the *attraction* of my good parts asi
no other charms.
S

The drawing of amber and jet, and other
bodies; and the *attraction* in gold, of the
quicksilver at distance; and the *attraction* o
distance; and that of fire, to naphtha; an
some herbs to water, though at distance;
others, we shall handle.

What, if the sun
Be centre to the world; and other star
By his *attractive* virtue and their own
Incited, dance about him various roun

Adorn'd
She was indeed, and lovely, to *attra*
Thy love; not thy subjection.

Loadstones and touched needles, laid long
silver, have not amitted their *attraction*.
Brown's Vulga

If the straws be in oil, amber draweth t
oil makes the straws to adhere so, that th
rise unto the *attractor*.

A man should scarce persuade the affecti
loadstone, or that jet and amber *attracteth*
light bodies.

Shew the care of approving all actions so
most effectually *attract* all to this profession.

darts and charms *attracts* and flames,
o and contract in their names. *Hudibras.*

ere then the same incentives of desire on
ide, the same *attractiveness* in riches, the
h in sovereignty. *South. Sermon* xiv. 293.

ion may be performed by impulse, or some
ans; I use that word, to signify any force
bodies tend towards one another.
Newton's Opticks.

ct, *attracted* to, the next in place,
and impell'd its neighbour to embrace.
Pope.

o be lov'd, and ev'ry heart subdue!
uph could e'er *attract* such crowds, as you?
Id.

hurries and transports us with a command-
uosity, Virgil leads us with an *attractive* ma
Id

attractive power in bodies is the most uni
nciple which produceth innumerable effects,
responding social appetite in human souls
at spring and source of moral actions.
Berkeley.

why was ruin so *attractive* made,
y fond man so easily betray'd?
ed we not, while mad we haste along,
ntle voice of Peace, or Pleasure's song?
Collins.

in every age must have had *attractive* hor-
erwise so many nations would not have
hither to celebrate the rites of superstition.
Beattie.

CTION. The word attraction is em-
o express the power by which bodies
each other; or rather that which gives
tendency to this approximation. It is
d and designated differently as its ope-
upon greater or less distances, and as
s or particles of matter are affected by
e first instance, viz. that of operation
distance, and upon mass, the power is
ravitation, while *contiguous attraction*
he agency of the power as exerted upon
articles, and as operating upon dis-
at are not sensible.

dies composing the material system of
rse are considered as having a mutual
m to approach each other, what-
y be the distances at which they are
The nature or absolutely essential prin-
this gravitating tendency is of course
; but many of its laws have been in-
d and satisfactorily applied to the expla-
f phenomena. The main and leading
ances which characterise gravitation are
t its action on bodies is directly as the
quantity of matter, and inversely as the
f the distance. These, then, are the
gravitation generally. (See GRAVITA-
But there are other species of attractions
kewise seem to be in operation upon
at distance, but which are apparently
in modification. Such are the *magnetic*
ric attractions, which some philosophers,
are disposed to generalize into an iden-
the power just adverted to. See MAG-
nd ELECTRICITY.

asses of matter are necessarily composed
e particles, and the power by which
ination of separate particles into a whole
s effected, is termed, as we have above stated, contiguous attraction; this being again subdivided into the attraction of cohesion or aggregation; and into chemical attraction or affinity; the former being exerted between particles of different kinds of matter: the first unites bodies so as to form aggregates, the essential properties of which are the same as that of the particles which compose it; the second forming substances which have qualities different from those of the bodies that have entered into combination.

These two varieties of contiguous attraction may perhaps be viewed as ultimately the same power, the difference of their effects being rather referrible to the difference of the material operated upon; but it is necessary to consider them distinctly, as the effects which they respectively produce, are themselves so different.

The attraction of cohesion or aggregation is exerted with the greatest force and effect when the body is at its maximum of solidity. In this case the particles which compose the mass are united by a reciprocal attraction of such energy, that they oppose mechanical attempts at separation, as is instanced in the force required to break a solid compact stone; but the attractive energy seems in different states of solidification to be exerted with different degrees of strength; then, again, from loose solid, the gradation proceeds to absolute liquid, and ultimately to gaseous and vaporous existence; in the ratio indeed of departure from solidity does the attraction of cohesion become weaker and weaker. In the condition of fluidity 'it is only exerted under such a modification, that a slight impulse is sufficient to disunite the parts, and scarcely any resistance is now opposed to any force, the operation of which is to bring these into new arrangements;' and, when vaporous existence obtains, this resistance is entirely overcome, 'the particles instead of attracting, now repel each other; they are made to approximate only by pressure, and they recede when this is withdrawn. Bodies, therefore, exist in the aëriform, the liquid, or the solid state, according as this attraction is exerted between their particles, and it is this power which unites their particles.'

It was supposed by the earlier philosophers, that as the attraction of gravitation influences bodies with a force inversely as the squares of the distance, so the laws of attraction between the particles themselves follow the same ratio; but the adhesion of bodies is found to be much greater than could be inferred from this source, and it was therefore conceived that cohesive attraction is governed by a much higher ratio, and probably the cube of the distances. 'The moderns on the contrary, among whom are Bergman, Guyton Morveau, and others, have remarked that these deductions are too general, because for the most part drawn from the consideration of spherical bodies, which admit of no contact but such as is indefinitely small, and exert the same powers on each other, whichever side may be obverted. They remark likewise, that the consequence depending upon the sum of the attractions in bodies not spherical, and at minute distances from each other, will not follow the inverted ratio of the square of the distance taken from any point assumed as the centre of gravity, admitting the particles to be governed by that law; but that it will greatly differ according to the sides of the solids which are presented to each other, and their respective distances; insomuch that the attractions of certain particles indefinitely near each other will be indefinitely increased, though the ratio of the powers acting upon the remoter particles, may continue nearly the same.'—*Ure*.

Much however is requisite in application to the rationale of minute attraction, if it may be so expressed, before a generalisation of its laws can be admitted, in the same manner as is done with respect to the principle of gravitation generally. 'Speculation on these heads (says the same able author from whom we have above extracted,) may be regarded in the present state of science as standing much in the same situation as the theory of gravity, which is minutely described in Plutarch, did with regard to astronomy before the time of Newton. As the celestial phenomena were formerly arranged from observation merely, but are now computed from the physical cause, gravitation, so, at present, the science now referred to, is the science of matter of fact duly arranged, without the assistance of any extensive theory, immediately deduced from the figures, volumes, densities, or mutual actions of the particles of bodies.'

As matter of fact, however, it is necessary to observe that to the power of cohesive attraction is opposed those influences which alter the forms of bodies from solids to fluids, and from fluids to vapor; and that aggregation is thus weakened or overcome by three opposing influences, viz. mechanical violence, heat, and chemical agency. The first is instanced in the operation of powdering or pulverising, and other processes by which separation to a greater than natural distance is effected of the constituent particles of matter. With respect to heat it is to be observed, that if a solid substance be exposed to it under circumstances favorable to its action, the volume of the substance is enlarged, the particles composing it are therefore separated from each other, and the attraction by which they were kept in union is counteracted. The enlargement of volume continuing to proceed as the heat is increased, until the point is reached, at which the attraction is so far modified that the body passes into a fluid form. If the application of heat be continued, the particles are still further separated from each other; and this still continues increasing until the attraction between them is overcome, a repulsion is established, and the fluid passes into the aerial form. Chemical action, as we have above remarked, is capable of effecting the same formative change. If a liquid be poured on a solid, it often happens that from the mutual attraction exerted between them, the aggregation of the solid is subverted, its particles are detached and diffused through the liquid so as to be no longer perceptible, and not even to impair the transparency. This constitutes the chemical process named solution, which is merely a case of chemical combination, differing from others in the circumstance that one of the bodies exists in the liquid form, and communicates that form to the other. It is the result of the p
nance of the mutual affinity of the liq
solid over the cohesion of the solid. Th
exerted to a solid by a substance in t
form may in like manner overcome its
and cause it to pass into the aëriform sta
even the mutual attraction exerted betw
solids is sometimes such as to diminish th
of cohesion in each so as to admit of the
and their transition to a liquid state.

We have now to notice those changes
dies, which, as opposed to their mere f
existence, may be regarded as the mani
more directly and unequivocally of wha
be called chemical agency; viz. that, i
the power is exerted between the part
atoms of different kinds; the result of th
effected by this affinity not being a mere ag
having the same essential properties, thou
haps different in form, but being altog
new material.

It is remarkable that Sir Isaac Newton
first to indicate with precision, the nat
extent of this power, as well as that of
tion. In his letter to Mr. Boyle, contain
servations on the nature of acids, and
publications, he speaks of bodies combi
some cases, and refusing to unite in oth
cause in the one instance an attraction e
the other it does not; and he further
compounds being again decomposed
agency of another body, owing to an a
exerted by that body to one of the prin
the compound, superior in force to the
traction.

Since the time of Newton, the subject o
cal attraction, or the attraction of affinity,
investigated with abundant ardor, and wi
success; minute observation of its laws and
nomena it produces, has developed a mult
most interesting facts and principles wh
fall to be noticed under the head of Che
and in other parts of this work. But
one leading principle by which it is r
that demands to be noticed in the present
it is this, that there is a general recip
saturating proportions in uniting bodies
other words, that combination is eff
definite proportions; the full developm
this law was made by Mr. Dalton, who
overturned the doctrine of indefinite
taught by the celebrated Berthollet, and h
successful in showing 'that the differe
pounds of the same principles do not p
each other by imperceptible gradations,
ceed in successive proportions, each a
of the first.'

So far indeed as the fact of definite pro
goes, we ought to give the credit of d
and detection to Richter of Berlin. Mr.
too, in his Comparative View of the P
and Antiphlogistic Theory, published in
ginning of the year 1789, had plainly i
the doctrine of multiple proportion, with
to the successive compounds of the sam
tuents; but to Mr. Dalton is due the
having, to use the language of Dr. W
shown, 'that in all cases the simple ele
bodies are disposed to unite atom to ato

er is in excess, it exceeds by a ratio to sed by some multiple of the number of

course of our researches, undertaken for se of giving the reader a correct notion eory, we have found no statement more explicit on the subject than that which met with in the last edition of Dr. Elements of Chemistry. We proceed, to extract largely from that section of which is devoted to the consideration mic theory; the several objections that n proposed to this theory, we purpose g in the article CHEMISTRY, under which y opportunities will necessarily occur edly adverting, both in direct and inci- ys, to the doctrine under notice. We e, however, take occasion to say, with r from whom we are about to extract, nstances in which the theory agrees with s of analysis are too numerous to be d as accidental coincidences; and no na have hitherto been shown to be irre- le with the hypothesis. Its value and ce, if not contradicted by new facts, will ly less felt as a guide to further inves- into the constitution of bodies, than as he accuracy of our present knowledge; niversality of its application to chemical na, will be scarcely inferior to that of f gravitation, in explaining the facts of ilosophy.

chemical combination of bodies with r, says Dr. H. a few leading circum- serve to be remarked.

me bodies unite in all proportions; for water and sulphuric acid, or water and

ther bodies combine in all proportions, certain point, beyond which, combina- nger takes place. Thus water will take sive portions of common salt, until at becomes incapable of dissolving any cases of this sort, as well as in those in- der the first head, combination is weak y destroyed, and the qualities, which to the components in their separate tinue to be apparent in the compound. There are many examples in which bo- in one proportion only; and in all s the proportion of the elements of a must be uniform for the species. Thus and chlorine unite in no other propor- an those constituting muriatic acid, weight, are 1 of the former to 36 of the n cases of this sort, combination is ge- ergetic; and the characteristic qualities ponents are no longer observable in the

Other bodies unite in several propor- t these proportions are definite, and, in mediate ones, no combination ensues. parts by weight of charcoal combine oxygen, or with 16, but not with inter- uantities; 64 parts copper combine with en, or with 16, and with those propor-

ther remarkable, that when one body combination with another, in several different proportions, the numbers indicating the greater proportions are exactly simple multiples of that denoting the smallest proportion. In other words, if the smallest proportion in which B combines with A, be denoted by 10, A may combine with twice 10 of B, or with three times 10, and so on: but with no intermediate quantities. There cannot be more striking instances of this law than those above mentioned, of the compounds of copper and charcoal with oxygen; in which the oxygen of the last compound may, in both cases, be observed to be a multiple of that of the first by the number 2. Examples, indeed, of this kind have, of late, so much increased in number, that the law of simple multiples, first discovered by Mr. Dalton, bids fair to become universal with respect at least to chemical compounds, the proportions of which are definite.

Facts of this kind are not only important in themselves, but also on account of the generalisations that have been deduced from them; for on them Mr. Dalton has founded what may be termed the atomic theory of the chemical constitution of bodies. Till this theory was proposed, we had no adequate explanation of the uniformity of the proportions of chemical compounds; or of the nature of the cause which renders combination, in other proportions, impossible. In this place I shall offer only a brief illustration of the theory; for in the course of the work I shall have occasion to apply it to the explanation of a variety of phenomena.

Though we appear, when we effect the chemical union of bodies, to operate on masses, yet it is consistent with the most rational view of the constitution of bodies to believe, that it is only between their ultimate particles, or atoms, that combination takes place. By the term atoms, it has been already stated, we are to understand the smallest parts of which bodies are composed. The infinite divisibility of matter, indeed, against which powerful arguments before existed, has been rendered still less probable by Dr. Wollaston, in his essay on the 'Finite Extent of the Atmosphere' (Phil. Trans. 1822); all the phenomena according with the supposition that the earth's atmosphere 'is of finite extent, limited by the weight of ultimate atoms of definite magnitude, no longer divisible by repulsion of their parts.' An atom, therefore, must be mechanically indivisible, and of course a fraction of an atom cannot exist, and is a contradiction in terms.

The atoms of all bodies probably consist of a solid corpuscle, forming a nucleus, and of an atmosphere of heat, by which that corpuscle is surrounded; for absolute contact is never supposed to take place between the atoms of bodies. The figure of a simple atom may readily, therefore, be conceived to be spherical. But in compound atoms, consisting of a single central atom, surrounded by other atoms of a different kind, it is obvious that the figure (contemplating the solid corpuscles only) cannot be spherical; yet if we include the atmosphere of heat, the figure of a compound atom may be spherical, or some shape approaching to a sphere. To determine the relative diameters of the atoms of bodies is a problem of considerable difficulty. With respect to those of elastic fluids, it was some time ago effected by Mr. Dalton (New Syst. p. 226), and the same principle has been lately extended by Mr. Emmett to solid and liquid bodies. (Ann. Phil. N. S. ix. 110).

Taking for granted that combination takes place between the atoms of bodies only, Mr. Dalton has deduced, from the relative weights in which bodies unite, the relative weights of their ultimate particles, or atoms, which is all that we are likely to determine respecting them; for it is not probable that our knowledge wil ever extend beyond the ratios of these weights. When only one combination of any two elementary bodies exists, he assumes, unless the contrary can be proved, that its elements are united atom to atom singly. Combinations of this sort he calls binary. But if several compounds can be obtained from the same elements, they combine, he supposes, in proportions, expressed by some simple multiple of the number of atoms. The following table exhibits a view of some of these combinations:

1 atom of A + 1 atom of B = 1 atom of C, binary.
1 atom of A + 2 atoms of B = 1 atom of D, ternary.
2 atoms of A + 1 atom of B = 1 atom of E, ternary.
1 atom of A + 3 atoms of B = 1 atom of F, quaternary.
3 atoms of A + 1 atom of B = 1 atom of G, quaternary.

A different classification of atoms has been proposed by Berzelius, viz. 1st, elementary atoms; 2dly, compound atoms. The compound atoms he divides again into three different species, viz. 1st, atoms formed of only two elementary substances united, or compound atoms of the first order: 2dly, atoms composed of more than two elementary substances; and these, as they are only found in organic bodies, or bodies obtained by the destruction of organic matter, he calls organic atoms: 3dly, atoms formed by the union of two or more compound atoms; as for example, the salts. These he calls compound atoms of the second order.

If elementary atoms of different kinds were of the same size, the greatest number of the atoms of A that could be combined with an atom of B would be 12; for this is the greatest number of spherical bodies that can be arranged in contact with a sphere of the same diameter. But this equality of size, though adopted by Berzelius, is not necessary to the hypothesis of Mr. Dalton, and is, indeed, supposed by him not to exist.

As an illustration of the mode in which the weight of the atoms of bodies is determined, let us suppose that any two elementary substances, A and B, form a binary compound; and that they have been proved experimentally to unite in the proportion, by weight, of 5 of the former to 4 of the latter; then, since, according to the hypothesis, they unite particle to particle, those numbers will express the relative weights of their atoms. But besides combining atom to atom singly, 1 atom of A may combine with 2 of B, or with 3, 4, &c. Or 1 atom of B may unite with 2 of A, or with 3, 4, &c. When such a series of compounds exists, the relative proportion of their elements ought necessarily, on analysis, to be proved to be 5 of A to 4 of B; or 5 to (4 + 4 =) 8; or 5 to (4 + 4 =) 12, &c.; or contrariwise, 4 of B to 5 of A; or 4 to (5 + 5 =) 10; or 4 to (5 + 5 + 5 =) 15. Between these there ought to be no intermediate compounds: and the existence of any such (as 5 of A to 6 of B, or 4 of B to 7½ of A) would, if clearly established, militate against the hypothesis.

To verify these numbers, it may be proper to examine the combinations of A and B with some third substance, for example, with C. Let us suppose that A and C form a binary compound, in which analysis discovers 5 parts of A and 3 of C. Then, if C and B are also capable of forming a binary compound, the relative proportion of its elements ought to be 4 of B to 3 of C; for these numbers denote the relative weights of their atoms. Now this is precisely the method by which Mr. Dalton has deduced the relative weights of oxygen, hydrogen, and nitrogen; the two first from the known composition of water, and the two last from the proportion of the elements of ammonia. Extending the comparison to a variety of other bodies, he has obtained a scale of the relative weights of their atoms.

In several instances, additional evidence is acquired of the accuracy of the weight, assigned to an element, by our obtaining the same number from the investigation of several of its compounds. For example:

1. In water, the hydrogen is to the oxygen as . 1 to 8.
2. In olefiant gas, the hydrogen is to the carbon as 1 to 6.
3. In carbonic oxide, the oxygen is to the carbon as 8 to 6.

Whether, therefore, we determine the weight of the atom of carbon, from the proportion in which it combines with hydrogen, or with oxygen, we arrive at the same number 6: an agreement which, as it occurs in various other instances, can scarcely be an accidental coincidence. In a similar manner, 8 is deducible, as representing the atom of oxygen, both from the combination of that base with hydrogen and with carbon; and 1 is inferred to be the relative weight of the atom of hydrogen from the two principal compounds into which it enters.

In selecting the body, which should be assumed as unity, Mr. Dalton has been induced to fix on hydrogen, because it is that body which unites with others in the smallest proportion. Thus, in water, we have 1 of hydrogen by weight to 8 of oxygen; in olefiant gas, 1 of hydrogen to 6 of carbon; and in sulphureted hydrogen, 1 of hydrogen to 16 of sulphur. Taking for granted that all these bodies are binary compounds, we have the following scale of numbers expressive of the relative weights of the atoms of their elements:

Hydrogen	1
Oxygen	8
Carbon	6
Sulphur	16

s. Wollaston and Thomson, and Professor
lius, on the other hand, have assumed
n as the decimal unit (the first making it
e second 1, and the third 100), chiefly with
w to facilitate the estimation of its numer-
compounds with other bodies. This, it
rs to me, is to be regretted, even though
ange may be in some respects for the bet-
ecause it is extremely desirable that chemi-
riters should employ an universal standard
mparison for the weights of the atoms of
s. It is easy, however, to reduce their
ers to Mr. Dalton's by the rule of propor-
Thus as 8 (Mr. Dalton's number for oxy-
corrected by the latest experiments), is to 1
umber for hydrogen), so is 10 (Dr. Wollas-
number for oxygen), to 1·25, the number
drogen.

H. Davy has assumed, with Mr. Dalton,
tom of hydrogen as unity: but that philo-
r, and Berzelius also, have modified the
y, by taking for granted that water is a
ound of one proportion (atom) of oxygen,
wo proportions (atoms) of hydrogen. This
nded on the fact, that two measures of hy-
n gas, and one of oxygen gas, are neces-
to form water; and on the supposition,
equal measures of different gases contain
numbers of atoms. And as, in water, the
gen is to the oxygen by weight as one to
two atoms or volumes of hydrogen must,
is hypothesis, weigh one, and one atom or
e of oxygen eight; or if we denote a single
of hydrogen by one, we must express an
of oxygen by sixteen. It is objectionable,
er, to this modification of the atomic
y, that it contradicts a fundamental propo-
of Mr. Dalton, the consistency of which
mechanical principles he has fully shown;
y, that that compound of any two ele-
, which is with most difficulty decomposed,
be presumed, unless the contrary can be
d, to be a binary one.

s easy to determine, in the manner al-
explained, the relative weights of the
of two elementary bodies, which unite
n one proportion. But when one body
, in different proportions, with another, it
essary, in order to ascertain the weight of
m, that we should know the smallest pro-
n in which the former combines with the
Thus, if we have a body A, 100 parts of
, by weight, combine with not less than
two of oxygen, the relative weight of its
will be to that of oxygen as 100 to thirty-
r, reducing these numbers to their lowest
as twenty-five to eight; and the number
-five will, therefore, express the relative
of the atom of A. But if, in the progress
nce, it should be found, that 100 parts of
capable of uniting with sixteen parts of
, then the relative weight of the atom of
t be doubled; for as 100 is to sixteen, so
to eight. This example will serve to ex-
the changes that have been sometimes made in the weights of the atoms of certain bodies; changes which, it may be observed, always consist either in the multiplication or division of the original weight by some simple number.

There are, it must be acknowledged, a few cases in which one body combines with another in different proportions; and yet the greater proportions are not multiples of the less, by any entire number. For example, we have two oxides of iron, the first of which consists of 100 iron and about thirty oxygen; the second of 100 iron and about forty-five oxygen. But the numbers thirty and forty-five are to each other as one to one and one-half. It will, however, render these numbers (one and one-half) consistent with the law of simple multiples, if we multiply each of them by two, which will change them to two and three; and if we suppose that there is an oxide of iron, though it has not yet been obtained experimentally, consisting of 100 iron and fifteen oxygen; for the multiplication of this last number by two and three, will then give us the known oxides of iron.

In some cases, the peroxide of iron for instance, where we have the apparent anomaly of one atom of one substance, united with one and one-half of another, it has been proposed by Dr. Thomson, Annals of Philosophy, p. 87, to remove the difficulty, by multiplying both numbers by two; and by assuming that, in such compounds, we have two atoms of the one combined with three atoms of the other. Such combinations, it is true, are exceptions to a law deduced by Berzelius; that in all inorganic compounds, one of the constituents is in the state of a single atom. But they are in no respect inconsistent with the views of Mr. Dalton; and are, indeed, expressly admitted by him to be compatible with his hypothesis, as well as confirmed by experience.

The reader is referred to an able account of the atomic theory, published by Mr. Ewart, in the sixth volume of Thompson's Annals. Under the word Equivalents too, in Ure's Dictionary of Chemistry, the subject will be found handled in a masterly manner.

On elective affinity, or the unequal, and selecting attraction of bodies, and on the causes which modify this action, both in a simple and complex manner, let the reader consult the article CHEMISTRY, in the present work.

ATTRACTIVES, or ATTRACTIVE REMEDIES, medicines which are to be externally applied, and which by their activity and warmth penetrate the pores, mix with, and rarefy, any obstructed matter, so as to render it fit for discharge, upon laying open the part by a caustic or incision.

ATTRAHENTS, in medicine, are the same with maturants, digestives, &c.

ATTRAP'. Fr. *attraper*, to catch, seize, apprehend, over-reach; used as we now use *entrap*. See TRAP.

> But Richard his brother being an expert and politique man, so craftilye conueyed, and so wisely ordered himselfe in his stormy tempest, that he was not *attrapped* eyther with net or snare. *Grafton*, v. 2.

> For, all his armour was like salvage weed
> With woody mosse bedight, and all his steel
> With oaken leaues *attrapt*, that seemed fit
> For saluage weight. *Spenser's Faerie Queene.*

ATTRIBUTE,
ATTRIB'UTABLE,
ATTRIBU'TION,
ATTRIBU'TIVE, *n.* & *adj.* } Lat. *attribuo*, from *ad* and *tribuo*, to lay a thing to. To apportion, to give a proper share; to yield as due, to impute, to ascribe, assign, charge.

It (envy) is also the vilest affection, and the most depraved: for which cause it is the *attribute* of the Devil, who is called the envious man, that soweth tares amongst the wheat by night: as it always cometh to pass, that Envy worketh subtily, and in the dark, and to the prejudice of good things, such as is the wheat. *Lord Bacon's Essays.*

It takes
From our achievements, tho' perform'd at height,
The pith and marrow of our *attribute*. *Shakspeare.*

If speaking truth,
In this fine age, were not thought flattery;
Such *attribution* should the Douglas have,
As not a soldier of this season's stamp,
Should go so general current through the world.
Id.

We suffer him to persuade us we are as gods; and never suspect, these glorious *attributions* may be no more than flattery. *Decay of Piety.*

We *attribute* nothing to God, that hath any repugnancy or contradiction in it. Power and wisdom have no repugnancy in them. *Tillotson.*

Much of the origination of the Americans seems to be *attributable* to the migrations of the Seres. *Hale.*

Your vain poets after did mistake,
Who ev'ry *attribute* a god did make. *Dryden.*

All the perfections of God are called his *attributes*; for he cannot be without them. *Watts's Logick.*

I have observed a campania determino, contrary to appearances, by the caution and conduct of a general, which were *attributed* to his infirmities. *Temple.*

The imperfection of telescopes is *attributed* to spherical glasses; and mathematicians have propounded, to figure them by the conical sections. *Newton's Opticks.*

As to be perfectly just is an *attribute* of the Divine Nature; to be so, to the utmost of our abilities, is the glory of a man. *Addison.*

Perhaps it may appear upon examination that the most polite ages are the least virtuous. This may be *attributed* to the folly of admitting wit and learning as merit in themselves, without considering the application of them. *Steele.*

Beneficence, would the followers of Epicurus say, is all founded on weakness; and whatever be pretended the kindness between men and men, is by every man directed to himself. This, it must be confessed, is of a piece with that hopeful philosophy which having patched man up out of the four elements, *attributes* his being to chance. *Grove.*

ATTRIBUTE, in physics, a quality determining something to be after a certain manner. Thus understanding is an attribute of mind, and extension an attribute of body. That attribute which the mind conceives as the foundation of all the rest is called its essential attribute; thus extension is by some, and solidity by others, esteemed the essential attributes of body or matter.

ATTRIBUTES, in logic, the predicates of any subject, or what may be affirmed or denied of any thing.

ATTRIBUTES, in painting and sculpture, symbols added to several figures to intimate their particular office and character. Thus the eagle is an attribute of Jupiter; a peacock
a caduceus, of Mercury; a club, of He
a palm, of Victory.

ATTRIBUTIVES, in grammar, are w
are significant of attributes; and th
adjectives, verbs, and particles, whi
tributes of substances; and adverbs,
note the attributes only of attributes.
who has introduced this distribution
denominates the former attributives
order, and the latter attributives of th

ATTRIT'E,
ATTRI'TION. } Lat. *attero*, *attrit*
against; *ad* and *ter*
small, to wear out by rubbing. The
bing used figuratively by theological

Or, by collision of two bodies, gri
Their air *attrite* to fire.

From these premises it follows, that i
can absolve him that is *attrite*, he may
who hath affections to sin still remaining;
who fears hell, but does not love God.
Taylor's Polemica

Attrition is a trouble for sin, merely for
punishment of it.

This vapour, ascending incessantly
abyss, and pervading the strata of gra
rest, decays the bones and vegetables lod
strata; this fluid, by its continual *attrit*
the said bodies.

The change of the aliment is effected,
of the inward stomach, and dissolvent liq
with heat.

ATTROW, in botany, a name gi
people of Guinea to a plant which
cases of swellings, boiling the leave
and using the decoction by way of a f
It is a species of kali, and is called
kali Guineense foliis polygoni, floribu
in modum dispositis, from its leaves
the common knot-grass, and its flowe
in rundles round the stalks.

ATTRUMMAPHOC, in botany, a
by the people of Guinea to a shrub
boil in water, and give the decoct
venereal disease. The juice, when fr
out, is snuffed up the nostrils to promot
and cure disorders of the head and ey
species of colutea. Dr. Herman cal
galus.

ATTUAL, a town of Arabia, in
the province of Yemen. Long. 42°
15° 57′ N.

ATTUDSJE, a town of Arabia,
between Kusma and Sai-id. Long.
lat. 14° 40′ N.

ATTUIE, a fort of Arabia, in Teha
on the coast of the Arabic Gulf. Long.
lat. 17° 37′ N.

ATTUNE. To tune, to set to a tu

Airs, vernal airs,
Breathing the smell of field and grove,
The trembling leaves.

Th' ethereal glow that stimulates thy
When all th' according powers harmon
And wake to energy each social aim,
Attuned spontaneous to the will of Jove
Be these, O man, the triumphs of thy
Beattie. Judgm

ATTURNATUS, in old law Latin, an attorney.

ATURÆ, a town of ancient Gaul, in the district of Novempopulana in Aquitania, on the Aturus; now called Aire. Long. 0° 16′ E., lat. 43° 42′ N.

ATURUS, a river of ancient Gaul in Aquitania, now called the Adour.

ATWAI'NE,
Atwee'n,
Atwi'xt,
Atwo.
} In twain, in two. Gothic *twos*, two.

> And Jhesus gaf out a great cry and diede. And the veyl of the temple was to rent *a two* from the heighest to bynethe. *Wiclif. Mark*, c. xv.

> And with that word he gan sigh as sore,
> Like as his heart rive would *atwaine*,
> And held his peace, and spake no more.
> *Chaucer. The Complaint of the Black Knight.*

> Her loose long yellow locks (like golden wire,
> Sprinkled with pearl, and perling flowers *atween*)
> Do, like a golden mantle, her attire. *Spenser.*

> With them an hideous storm of wind arose
> With dreadful thunder, and lightning *atwixt*,
> And an earthquake, as if it straight would loose,
> The world's foundations from its centre fixt.
> *Id. Faerie Queene*, b. ii.

ATWOOD (George), a celebrated author in mathematical and mechanical investigations, was born in the early part of the year 1746. He was educated at Westminster school, where he was admitted in 1759. Six years afterwards he was elected to Trinity college, Cambridge, and took his degree of Bachelor of Arts in 1769, with the rank of third wrangler. This distinction was amply sufficient to give him a claim to further advancement in his own college, on the list of which he stood foremost of his contemporaries; and, in due time, he obtained a fellowship, and was afterwards one of the tutors. He became Master of Arts in 1772; and, in 1776, was elected a Fellow of the Royal Society of London. The higher branches of the mathematics having previously made some important advances at Cambridge, under the auspices of Dr. Waring, Mr. Atwood delivered, for several successive years, a course of lectures in the observatory of Trinity college, which were very generally attended. In 1784, or soon afterwards, Mr. Pitt, who had become acquainted with his merits by attending his lectures, bestowed on him a patent office, which required but little of his attendance, in order to have a claim on the employment of his mathematical abilities in financial calculations. He died universally respected in 1807. The following, we believe, is a correct list of Mr. Atwood's publications:—1. A Description of Experiments to illustrate a Course of Lectures, 8vo. 1775, or 1776. 2. This work was reprinted with additions, under the title of An Analysis of a Course of Lectures on the Principles of Natural Philosophy, 8vo. Cambridge, 1784. 3. A General Theory for the Mensuration of the Angle subtended by two Objects, of which one is observed by Rays after two Reflections from plane Surfaces, and the other by Rays coming directly to the Spectator's eye. Phil. Trans. 1781, p. 395. 4. A Treatise on the Rectilinear Motion and Rotation of Bodies, with a Description of Original Experiments relative to the Subject, 8vo. Cambridge, 1784. 5. Investigations founded on the Theory of Motion, for determining the Times of Vibration of Watch Balances. Phil. Trans. 1794. p. 119. 6. The Construction and Analysis of Geometrical Propositions, determining the positions assumed by homogeneal bodies, which float freely, and at rest, on a fluid surface; also Determining the Stability of Ships, and of other Floating Bodies. Phil. Trans. 1796, p. 46. 7. A Disquisition on the Stability of Ships. Phil. Trans. 1798, p. 201. 8. A Review of the Statutes and Ordinances of Assize, which have been established in England from the 4th year of King John, 1202, to the 37th of his present Majesty, 4to. London, 1801. 9. A Dissertation on the Construction and Properties of Arches 4to. London, 1801. 10. A Supplement to a Tract entitled a Treatise on the Construction and Properties of Arches, published in the year 1801; and containing Propositions for Determining the weights of the several sections which constitute an arch, inferred from the angles. Also containing a Demonstration of the angles of the several sections, when they are inferred from the weights thereof. To which is added, a Description of original experiments to verify and illustrate the principles in this treatise. With occasional remarks on the construction of an iron bridge of one arch, proposed to be erected over the river Thames at London. Part II. By the author of the first part, 4to. London, 1804. Dated 24th Nov. 1803. 11. A Treatise on Optics is mentioned by Nichols, as having been partly printed by Bowyer, in 1776, but never completed.

ATYCHIA, in entomology, a genus of insects of the order lepidoptera, and family zygænides. Its generic characters are: palpi rising considerably beyond the clypeus, anteriorly very hirsute with long hairs, wings short; posterior tibiæ with scales and elongated spurs.

ATYPOS; from α negative, and τυπος, form; irregular, a word used by the old writers in medicine, for such diseases as did not observe any regularity in their periods. Others have used the word for deformities in the limbs; and others for defects in the organs of speech.

ATYPUS, in entomology, a genus of the class arachnides, order acera, and family araneides. Its generic characters are: eyes on each side geminate; labium inserted under the base of the maxillæ, very small, quadrate; palpi placed at the base of the external dilatation of the maxillæ. The A. sulzeri has been found in this country by Dr. Leach, and inhabits turfy declivities, where it forms a deep cylindrical excavation, seven or eight inches long, in which it weaves a kind of funnel of white silk. The cocoon in which the eggs are deposited, is fixed at the bottom of this cavity by means of threads attached to each end.

ATYS, the son of Crœsus, king of Lydia, is reported to have been born tongue-tacked, and of consequence to have been dumb for many years; till observing one of Cyrus's soldiers going to kill his father, his passion suddenly broke the membrane that held his tongue, and he cried out 'Save the king!'

Atys, in fabulous history, a celebrated shepherd of Phrygia, with whom Cybele, commonly called the mother of the gods, fell passionately in love. She gave him the care of her temple, at the same time making him vow he would always live in celibacy. He afterwards violated his promise by an amour with the nymph Sangaris, on which account the goddess brought upon him such a species of insanity which made him castrate himself with a sharp stone. The same operation was purposely performed by his sacerdotal successors, in the service of Cybele, that their vows of perpetual chastity might not be broken. This is the most generally received account; though, according to some writers, the cause of the fondness of the goddess for Atys, was his introducing her festivals into the greatest part of Asia Minor; and that she herself mutilated him. From Pausanias we learn that Atys was the son of a nymph of the Sangar, who became pregnant by placing the branch of an almond tree in her bosom. According to the passage (Achaic. c. 17), Jupiter having had an amorous dream, some of the impurity of the god dropt upon the earth, from which a monster of an human form was produced, with the parts of both sexes. This monster was named Agdistis, and was by the gods deprived of the characteristics of the male sex. The mutilated parts having been thrown on the ground, an almond tree sprung from them, a branch of which one of the daughters of the Sangar took and put in her bosom. As soon as Atys was born, he was exposed in a wood, where a she-goat nourished and preserved him. While in the wood, he was observed by Agdistis, who was captivated with his beauty; and when Atys was about to celebrate his nuptials with the king of Pessinus's daughter, Agdistis, jealous of a rival, infused into the king and his intended son-in-law such a spirit of madness as led them to attack and mutilate one another in the struggle. We farther learn from Ovid, that as Atys was going to lay violent hands upon himself, he was changed by Cybele into a pine-tree; and that from that time the pine-tree was held sacred to the mother of the gods. Divine honors were paid to Atys after his death, and temples erected to his memory, among which that at Dymæ was the most famous.

Atys, a Trojan, who accompanied Æneas to Italy, and from whom it is supposed the family of the Atii at Rome descended.

AVA, or Angwa, a city of the Birman empire, four miles west of Ummarapura, the metropolis. It is in lat. 21° 51′ N., and long. 95° 58′ E.; and was once the capital, but is now in ruins. Here are two large temples, one of which contains an image of Gaudma, (Gautama) or Budd'ha, twenty-four feet in height, and ten feet across the breast. There are also the reliques of many other temples in decay. For Ava, as an empire, see Birman Empire, its more usual and modern designation.

AVA-AVA, a plant, so called by the inhabitants of Otaheite, from the leaves of which they express an intoxicating juice. It is drank very freely by their chiefs, who vie with each other in drinking the greatest number of draughts, each draught being about a pint; but they keep it carefully from their women.

AUACH, or Avach, the ancient name of Avoch.

AUAD, a mountainous district of Arabia, in the province of Yemen, near the city of Udden. Long. 44° 10′ E., lat. 14° 5′ N.

AVACHA, Awatscha, a considerable river of Kamschatka, falling, after a course of ninety miles from west to east, into a bay which bears the same name. Its mouth is rather narrow, but deep enough to admit ships of the greatest burden, and abounding in good anchorage; the best of which is the harbour of St. Peter and St. Paul. On the north side of the bay is the Volcano of Avacha, which constantly smokes, though it has had no considerable eruption since 1734, and that only lasted twenty-four hours. A small town called the Avachinski Ostrog was begun in 1740; it is in a tolerably flourishing state, and principally supported by the trade in beaver skins. The river Avacha has a course of about ninety miles.

AVADOUTAS, a sect of Indian Brahmins, who in austerity surpass all the rest. The other sects retain earthen vessels to hold their provisions, and a stick to lean on: but none of these are used by the Avadoutas; they only cover their nakedness with a piece of cloth, and some of them even lay that aside, and go stark naked, besmearing their bodies with cow-dung! When hungry, some go into houses, and, without speaking, hold out their hand; eating on the spot whatever is given them. Others retire to the sides of holy rivers, and there expect the peasants to bring them provisions, which they generally do very liberally.

AVAIL′, *v.* & *n.* }
Avail′able, } Fr. *valoir*, to be worth; Lat. *valeo*, to be strong, to
Avail′ableness. } be in health. To possess advantageous properties; to be of force or signification. The *a* is intensive.

All things subject to action, the will does so far incline unto; as reason judges them more *available* to our bliss. *Hooker.*

Laws human are *available* by consent. *Id.*

Drake put one of his men to death, having no authority nor commission *available.* *Raleigh.*

For all that else did come, were sure to fail;
Yet would he further none, but for *avail.* *Spenser.*

I charge thee,
As heav'n shall work in me for thine *avail*,
To tell me truly. *Shakspeare*

We differ, from that supposition of the efficacy, or *availableness*, or suitableness, of these to the end. *Hale.*

Those excellent means God has bestowed on us, well employed, cannot but much *avail* us: but if otherwise perverted, they ruine and confound us. *Burton's Anatomy of Melancholy.*

Truth light upon this way, is of no more *avail* to us than errour. *Locke.*

Nor can my strength *avail*; unless, by thee
Endu'd with force, I gain the victory. *Dryden.*

When real merit is wanting; it *avails* nothing, to have been encouraged by the great. *Pope's Preface to his Works.*

Mean time he voyag'd, to explore the will
Of Jove, on high Dodona's holy hill;
What means might best his safe return *avail.* *Pope.*

hat avails the lore of Rome and Greece,
art, fortune, enterprise can bring,
scorn, remorse, or pride, the bosom wring.
Beattie.

or Marriage, in ancient Scot's law,
ality in inward-holding, by which the
was entitled to a certain sum from his
on his attaining the age of puberty, or
ears, as the avail and value of his tocher.
, or Bahrein, the largest of the Bah-
nds in the gulf of Persia. It is about
es in length, and twelve wide, where it
t. Besides the fortified town of Bah-
ontains about sixty poor villages. Long.
, lat. 26° 36′ N.
ANCHES, prodigious masses of snow
at roll down the mountains in Savoy,
ly mount Blanc, to the extreme danger
rs.

ng sudden from the loaded cliffs,
to steep, loud thund'ring down they come,
aste in dire commotion all;
and flocks, and travellers and swains,
imes whole brigades of marching troops,
sleeping in the dead of night,
beneath the smothering ruin hurl'd.'

f them are 150 or 200 feet diameter;
ments of the ice-rocks which break by
weight from the tops of the precipices.
c, Mount.
ON, or Avallon, the chief town of an
ment in the department of the Yonne
, situated, with its strong castle, on the
ain. Population 4200; that of the
ment is 42,800. It is twenty leagues
ijon.
, or Avolon, a peninsula of New-

, or Avalonia, the ancient name of
ry, where king Arthur was buried. See
and Glastonbury.
OS (Ferdinand Francis d'), marquis of
was born in the kingdom of Naples.
d into the service of Charles V. and ac-
l the army to the battle of Ravenna,
was made prisoner. During his cap-
mused himself in writing a Dialogue
and dedicated it to his wife. After his
again entered into the emperor's ser-
was present at the taking of Milan,
died in 1525, aged thirty-six.
(Alphonso d'), marquis del Vasto, was
02. He was a near relation of the
d was likewise a zealous officer in the
Charles V. He died in 1546.
IA, in the Turkish legislature, a fine for
d on deaths, paid to the governor of
In the places wherein several nations
er under a Turkish governor, he takes
able method of punishing all crimes
Christians or Jews, unless it be the
a Turk.
T, the front of an army. See Van.
is defined by Mr. Chalmers, a French
n, signifying before, or any priority in
time or place; sometimes used in com-
n our language, but more usually con-
d wrote vaunt, vant, or van.
Fosse, &c. See Van Fosse.

Avant-guard, avantgarde, French. The van, the first body of an army.—The horsemen might issue forth without disturbance of the foot, and the avant-guard without shuffling with the battail or arriere.—*Haward.*

Avant Mure, an outward wall.

Avant Peach, a peach early ripe.

Avant Ward, the van of an army.

AVANTE, among ancient medical authors, a name given to a disease, seeming, from their accounts of it to be the same with hypochondriasis.

AVANTIO (John Mario), an Italian lawyer of great eminence, born in 1564. He displayed his abilities first at Ferrara, and afterwards at Padua; at which last place he died in 1622. Besides several other pieces, he wrote an ecclesiastical history, from the commencement of the reformation.

Avantio (Charles), a celebrated physician, was a son of the above. He was author of a commentary on the work of Bapt. Fiera, printed at Padua, in 1649.

AVANTURINE, in mineralogy, a species of common quartz, containing a number of minute fissures, and sometimes crystals of mica. These lie in parallel, or nearly parallel planes: so that when the stone is cut into a double convex figure, the imaginary plane of junction of the two spherical segments being parallel to the planes in which the fissures lie, a play of light is produced on the surface of the stone. The most beautiful varieties have been found in Spain.

AVARA, a river of Gallia Celtica, mentioned by Cæsar, in the county of Brituriges, now called Aruon.

AVARES, one of the predatory tribes in the north of Asia Minor, who made great ravages in the eastern empire. Having penetrated the Sclavonian and Greek territories, they first appeared on the banks of the Danube, A. D. 560, and established themselves at Sirmium, and in Upper Hungary. Their riches, and their alliance with Thassilo, chief of the Baii, alarmed Charlemagne, who, in A. D. 803, attacked them in person, and drove them into Corinthia. They have been conjectured to be the Aorsi, or Adorsi, of Strabo.

There is still on the banks of the Kóijú, in Lezgistán, and on the eastern side of Mount Caucasus, a tribe called Aor or Avar, whose language is a peculiar one, but has an affinity with several others used in the neighbouring districts. There is also a city of this name consisting of about 600 houses, the residence of a hereditary prince or chief. He has considerable influence; and, on a late occasion, a neighbouring potentate purchased his sister in marriage for £25,000. In his palace, the only one with glass windows in eastern Caucasus, there is a large hall, well provided with provisions, constantly open to all strangers. In the city of Avar fine shawls are manufactured from the wool of Caucasian sheep; one of which, an ell and a half long, may be drawn through a ring. These people are warlike and courageous; and their chief, the Avar Khán, is much courted by the Russians. He was raised to the rank of a lieutenant-general, with a pension of 10,000 silver rubles (£2000) in 1807. He can bring 20,000 men into the field, and his dependant khan 10,000 more.

AVARIA, in the Turkish and Persian dominions, a sum of money exacted from the Christians or Europeans, to be quit of some false accusation framed on purpose.

AV'ARICE,
AVARIC'IOUS,
AVARIC'IOUSLY,
AVARIC'IOUSNESS,
AV'AROUS.
} Lat. *avaritia, avarus;* from *avare*, to covet, to desire greedily. Applied to one whose ruling passion is the acquisition of wealth for its own sake.

> Now good men! God forgive you your trespass,
> And ware you fro the sinne of *avarice*,
> Min holy pardon may you all warice;
> So that ye offre nobles or starlinges,
> Or elles silver broches, spones, ringes.
>
> *Chaucer. Pardeneres Tale.*

> But father I herde you say
> How the *auorous* hath yet some way
> Whereof he maie be glad. For hee
> Maie, whan hym list, his tresure see,
> And grope, and fele it all aboute.
>
> *Gower. Con. A.* book v.

This speech has been condemned as *avaricious*; and Eustathius judges it to be spoken artfully.

Broome on the Odyssey.

> Luxurious, *avaricious*, false, deceitful.
>
> *Shaksp. Macbeth.*

> There grows
> In my most ill-compos'd affection, such
> A stanchless *avarice*; that, were I king,
> I should cut off the nobles for their lands.
>
> *Shakspeare.*

> This *avarice* of praise in times to come;
> Those long inscriptions, crowded on the tomb.
>
> *Dryden.*

> Nor love his peace of mind destroys,
> Nor wicked *avarice* of wealth. *Id.*

Avarice is insatiable; and so he went, still pushing on for more. *L'Estrange.*

Though the apprehensions of the aged may justify a cautious frugality, they can by no means excuse a sordid *avarice*. *Blair.*

An insatiable thirst of riches renders Pygmalion every day more wretched and detestable. In his dominions it is a crime to be wealthy: *avarice* makes him jealous, suspicious, and cruel: he persecutes the rich, and he dreads the poor.

Hawkesworth's Telemachus.

AVARICE, of all the various passions by which mankind is governed, is the least to be accounted for, as it precludes its subject from all pleasure except that of hoarding. The ambitious man, the gamester, or even the prodigal, have all something to plead, by way of palliative for their inordinate affections to their respective objects and pursuits; but the subject of avarice gratifies his passion at the expense of every conveniency, indulgence, or even necessary of life. And though convinced that money is only the means of enjoyment, not the end, and that it is only valuable as far as it is useful for attaining that end, yet such is his infatuation, that the images of his bags and shining metal, with all the annexed ideas of property, enjoyment, security against want, independence, &c. prevent him from using the means, and make him appear without property, in misery, in want, and dependent. No passion is more opposite to the hope of a future life than avarice.

AVARICUM, an ancient town of the Bi
in Gallia Celtica, situated on the Avara, in
fertile soil; now called Bourges. Long, 2°
lat. 47° 5' N.

AVAROMO TEMO, in botany, a sil
tree, which grows in the Brasils. The
externally of a cineritious, and internall
deep red color, and is the only part of the
used for medicinal purposes, though some
use the leaves. But the bark, which is
whether reduced to a powder, or boiled an
as a fomentation, cures inveterate ulcers,
is said, has been found to cure even cance
is also used as a corroborant, on account
astringent quality, by way of bath.

AVAST, from basta, Ital. it is enough: en
cease. A word used among seamen. It
precedes some orders, or some conversatio
answers the same purpose as—harkye, list,
take heed, hold. Like the Ital. avacci,
it means—be attentive, be on the watch
awake.—Tooke, ii. 362.

AVATAR, in the Hindoo mythology, an
nation of the Deity. Ten of these are in
tions of Vishnú, the supreme God, in hi
racter of preserver. Four are the subj
Puranas, or sacred poems. Nine of the
believed to be past, and the tenth is yet to

The first is the Matsya Avatâr, or des
the deity in the form of a fish. Of what
this fish was, the sages have not determine
Vishnús' object was the recovery of the holy
from the ocean, in which they remaine
one of the periodical dissolutions of the ur

The second is the Kachyapa, or Kúrma
in which the same god appeared in the for
tortoise, in order to sustain and give stab
the newly created earth.

The third is the Varáha Avatár, when
peared in the shape of a boar, and plungi
the waters which had overwhelmed the ea
one of its periodical destructions, fixed hi
in it and drew it up.

The fourth is the Nara-sing'ha, or m
Avatár. Kasyapa, one of the descend
Daksha, the first created man, had two
whose characters, to judge from their cl
were very different, for one produced th
and the other the giants. Among the
were two Hiranyáksha and Hiranyakas'ip
it seems stole a march on Brahmà, and
compelled him, by dint of their austerit
grant what he had no mind to give ther
mortality. Their strength was already
terrific, so that to give it an endless d
was more than the god thought prudent.
ever, he could not resist the claim of au
practised for some thousands of years
therefore, to release himself from this di
he engaged that no ordinary being should
them; and that they should not die ei
day or by night, in earth or in heaven,
by water, or by the sword. Satisfied wi
assurance, they immediately began to sh
well they understood the value of their
they conquered the whole earth, an
dethroned Indra, king of heaven. He i
diately carried his complaint to Brahn
very coolly answered that he could take

hose upon whom he had bestowed a
but that perhaps Vishnú would. This
ty kindly undertook to settle the busi-
restore Indra to his kingdom. To
t purpose he assumed a mixed form,
and half lion; he concealed himself in
a in Hiranya-kas'ipu's palace, and, when
ntic monster struck the column in a fit
nd profaneness, out started Nerasing'ha,
he giant by his thigh, and ripped
in an instant. This was certainly the
either of fire, water, nor the sword; it
ainly not done by any ordinary being;
was it done by day or night, for it was
ening, and it was also under the eaves,
sequently between earth and heaven.
as Brahma's promise fulfilled. How
worthy Hiranyáksha, or Gold-eye, was
e are not told; but Vishnú consoled
, Hyranya-kas'ipu's pious son, by assur-
that his father would ascend to heaven.

fth, or Vámana incarnation, was occa-
y the same family. Pralhád'ha had a
lacious son, named Bali, who daringly
ferings to himself, and performed the
d'ha, or sacrifice of a horse so often,
cely any thing could be refused to him,
emanded the throne of heaven. Vishnú,
een applied to for relief against this
me giant, conveyed himself into the
Aditi, the wife of Kas'ypa, the grand-
the giants, and was born a dwarf—Vá-
His diminutive size charmed the tyrant
, to gratify him, promised to give what-
hould ask. He modestly demanded as
d as could be measured by three steps:
cing one foot on earth and another on
ut started a third from his belly, for
demanded a resting-place; the king's
the only one that could be found, and
up matters with the god, whose power
indisputable, Bali consented to go
Patala, or hell, on a promise of Vishnú's
n. Thus did a dwarf repress the turbu-
a giant.

sixth, or Parasú-Ramá Avatár, Vishnú
o the world, as the son of Jamadagni, a
nt of the sage B'hrigu, in order to chas-
military caste, or Kshatriyas, whose in-
and disorder had become insufferable.
em, a king, named Arjuna, took a fancy to
ous cow, named Káma-d'hénu, the pro-
Jamadagni, and attacking her possessor
rge army, routed and slew him. Ràma,
f the luckess sage, determined to avenge
's death, and going to Kailása (Olympus),
down Siva's porters, who refused ad-
to him, presented himself to the god,
ived from him a paras'u, or weapon with
slew Arjuna. These incarnations all
e in the Satya Yuga, or Golden Age: the
r are more modern.

eventh, orRáma-chandra Avatár, was
descent for the purpose of subduing
giant Ravana, who reigned in Lankà, or
and carried off Sità, the wife of Ramá,
sence from home. Their contests and
victory of Ráma are the subject of the
d epic poem called the Ramáyana.

Pralamba, and other troublesome giants, who, it appears, were not confined to the golden age of the Hindoo mythology, made an eighth incarnation requisite, and Vishnú again descended in the form of Bala-Ráma. This took place in the Dwápar, or Brazen Age, and brings us nearer to the period of something like genuine history.

Budd'ha, the ninth, overcame the giants, his adversaries, by a very singular artifice; he produced, by his preaching, an universal scepticism, so that the gods, no longer compelled to grant prayers, had no difficulty in ridding the world of its scourges, these all-powerful giants.

The Kalkì, or tenth Avatár, is yet to come! He will be the son of a Bráhman, and be born in the city of Samb'hala at the close of the Kali Yuga, or Iron age. He will appear, say the Bráhmans, mounted, like a crowned conqueror, on a white steed, with a scymitar blazing like a comet, to mow down all his foes. Plates of the incarnations of Vishnú from Indian drawings, were first given by Athanasius Kircher, in his China Illustrata, in 1667. They are to be found also in Baldæus (Churchill's collection), whence they were copied in Mr. Maurice's Indian Antiquities: which see.—*Ward's View of Hindoo Literature, &c.*

AVAUNCHERS, among hunters, the second branches of a deer's horns.

AVAUNT. Fr. *avant*, a word of abhorrence, by which any one is driven away.

> O, he is bold, and blushes not at death;
> *Avaunt*, thou hateful villain, get thee gone!
>
> *Shakspeare.*

AVAUX, a town of Champagne, in France, with 1500 inhabitants, belonging to the department of the Ardennes, arrondissement of Rhetel. It is seated on the Aisne, not far from Rheims, and formerly belonged to the family of de Memes, from whom sprung the celebrated diplomatist Claudius comte d'Avaux, ambassador of France at the treaty of Westphalia.

AUB, or Auw, a baliwick and town of Franconia, on the Gollach, between Uffenheim and Ochsenfurt. It had, in 1804, about 160 houses, and 1120 inhabitants, and belonged to the district of Rottingen, in the principality of Wurtzburg, but was united to Bavaria in 1815. The hospital is well endowed. It is seventeen miles south of Wurtzburg. Long. 10° 10′ E., lat. 49° 37′ N.

AUBAINE, in the ci-devant customs of France, was a right vested in the king of being heir to all foreigners that died within his dominions. By this right the French king claimed the whole inheritance of foreigners, notwithstanding any testament the deceased could make. But an ambassador was not subjected to it; and the Swiss, Savoyards, Scots, and Portuguese, were also exempted.

AUBE, a department of France, so named from the river bounded on the north by that of Marne; on the east by Upper Marne; on the south by those of the Cote d'Or and Yonne; and on the west by that of Seine and Marne. Its chief town is Troyes.

Aube, a river of France, which rises in the department of Upper Marne, and, running through that of Aube, passes by Bar-sur-Aube and Arcis, and falls into the Seine, near Nogent.

AUBENAS, a town of France, in the Lower Vivarais, in Languedoc, now included in the department of the Ardeche, arrondissement of Privas. It was for some time the capital of an arrondissement, but is now only the head of a canton. The population is about 3315. Aubenas is a manufacturing place of some consequence, containing silk-mills and extensive cloth-works. The twisted silk, called organsin, is wrought here by a mill, constructed by the ingenious Vaucanson; the average quantity manufactured in a year being 550 cwt. Here also are made handkerchiefs, neckcloths, chintzs, and stuffs, partly consumed in the country, and partly exported to the Levant. The raw material is brought chiefly from Spain. The cloths dyed here are also in great repute. In the neighbourhood is a famous medicinal spring, and mines of coal. It lies on the Ardeche, five leagues S. W. of Privas, and 135 S. S. E. of Paris.

AUBERT (Peter), an eminent French lawyer, born at Lyons in 1642. He appeared very early in the world as an author, by the publication of a romance, called Rétour d'Isle d'Amour. He filled several important stations in the city of Lyons, and established an extensive public library. In 1710 he published two volumes of Cases, and, in 1723, a new edition of Richelet's Dictionary, three volumes, folio.

AUBERTIN (Edmund), a French Protestant divine,—was born in 1595, and in 1631 was chosen minister of the reformed church at Paris. In 1633 he published a work on the Eucharist of the ancient church, which was attacked by Arnauld and other Catholic writers. He died at Paris in 1652.

AUBERY (Anthony), a French lawyer, and historical writer, born in 1617. He was very much given to study, taking no pleasure in the bustle of public business, but preferring a retired life. The following are the principal fruits of his labours: 1. The History of the Cardinals, five volumes, 4to. 1642. 2. Memoirs of the Cardinal de Richelieu, two volumes, folio, 1660; in which the character of the cardinal is more respected than truth, which is sometimes sacrificed to his praise. 3. The History of Cardinal Mazarin, four volumes, 12mo. 1751. 4. On the Pre-eminence of the kings of France, 4to. 1649. 5. A Treatise on the Pretensions of the king of France to the Empire, 4to. 1667. He died in 1695.

AUBERY (John), a French physician of the seventeenth century. He was author of an Apology for Physic, in Latin, 8vo. printed at Paris in 1608, and an Antidote to Love, in French, 12mo. 1559.

AUBERY (Louis de Maurier), a French writer. In 1682 he published Memoirs for a History of Holland, two volumes, 12mo. He died in 1687, leaving Memoirs of Hamburgh, Lubeck, Holstein, Denmark, and Sweden, which were published at Amsterdam, in 1737.

AUBESPINE (Claude de l'), baron of Chateau-Neuf. He was a descendant of a noble family at Chartrain, and filled the office of secretary of state under several of the kings of France. He died in 1567.

AUBESPINE (Charles de l'), marquis of Ch teau-Neuf. He was chancellor of France, b was imprisoned ten years. After his liberatio he was taken into favor by Henry IV. He di in 1653.

AUBESPINE (Gabriel de l'), was of the sam family with the above. He became bishop o Orleans, in which station he showed himself man of great learning. He died in 1630, ag fifty-two.

AUBESPINE (Magdalen de l'), a celebrated French lady. She was the wife of de Neuville, seigneur de Villeroi, and author of several excellent pieces in prose and verse. She died in 1596.

AUBIER, or AUBOUR, the French name fo that soft whitish substance which lies roun a tree between the bark and the solid woo Mr. Barkley thinks it performs the office veins. It may be considered as a third ba whose fibres are less compact than those of others, and is properly the fat of the tree. hardens gradually, and becomes impercepti part of the woody substance. There are trees without some aubier, which is more or thick according to the situation in which trees are planted, for the more they are ex to the rays of the sun the less aubier w found in them. In the oak it is seldom an inch, or an inch and a half thick. a tree is cut down, or dies in the groun aubier remains always of the same cons without being turned into solid wood. liable to rot, and therefore merchants ou take care that as little aubier is left on wood as possible.

AUBIGNAN, a town of France, in th naissin, with the title of marquisate, and 1 habitants, now included in the departme Vaucluse, arrondissement of Orange. It is for its oil. Five leagues and a half N. E. Avignon.

AUBIGNE (D' Theodore Agrippa), an trious French author, was born in 1550. made such an early progress in letters, that said to have translated Plato's Crito, fro Greek into French, when he was only years old. His father dying when he was teen, he attached himself to the cause of IV. under whom he fought, and who made gentleman of his bedchamber. He soon be a favorite with Henry, who raised him to other high offices; but he at length lost his vor, partly by refusing to comply with his sions, and partly by a democratic kind of in bility. Quitting France, he took refuge neva, where he was highly honored, and the remainder of his days in writing diff works. His chief production is his Histoire verselle, from 1550 to 1601; with a short count of the Death of Henry IV. three vol folio. The first volume was scarcely publi when the parliament of Paris condemned it burnt, as 'a work wherein kings are treated only with little respect, but even outraged!' died at Geneva, in 1630, aged eighty.

AUBIGNE, or AUBIGNY, a small town of Fr in the department of Cher, seated on the N in a fine plain, twenty-four miles north of Bou

led with strong walls, wide ditches,
nterscarps. The castle is within the
ery handsome. Long. 2° 28′ E., lat.

a ci-devant dukedom in France,
the duke of Richmond in Eng-
endant of the duchess of Portland,
nistress of Charles II., at whose so-
as given her. It was confirmed to
ichmond and registered in the Par-
aris in 1777, but abolished with
titles in 1790.

in horsemanship, a broken kind of
an amble and a gallop,—accounted

t.), sometimes called Hodiere, a
, situated on a bay of the same name,
of Jersey, three miles from St. Hil-
port is defended by a pier, which
the sea, in the same manner as that
. The town is well built, and much
by merchants. The parish church
e distance, there is here a chapel of
et on Mondays. Latitude 49° 7′, N.
W.

TIA, in botany, a genus of the class
olyandria monogynia. The essential
re, calyx five-leaved, corolla, five pe-
ule many celled, echinate, with many
ch cell. There are three species, all
natives of South America.

NE, a district or bailiage of Switzer-
e canton of Bern, and territory of
ch contains several villages, mostly at
mount Jura.

, a rapid river of Switzerland, which
h the above district, and falls into the
eva. In mount Jura there is a very
which is a natural and perpetual ice-
t the bottom is heard a great noise,
a subterraneous river, which is sup-
that of the Aubonne, because it first
th several sources, about a hundred
the foot of that mountain.

, a town of Switzerland, in the above
ated near the river, seven miles north
of Geneva, upon an eminence which
declivity, at the foot of which runs
ith an impetuous torrent. It is built
of an amphitheatre; on the upper
ch stands a castle with a court, and a
ported by pillars of a single stone each.
stands high, and there is a most de-
pect, not only of the town and neigh-
ds, but of the whole lake of Geneva
d that surrounds it. Aubonne is si-
een miles W. of Lausanne. Long. 6°
46° 30′ N.

Y (John), F. R. S. a famous English
orn at Eston-Piers, in Wiltshire, in
educated at Trinity college, Oxford.
was entered of the middle Temple,
the study of the law on account of
rassments in his private affairs. He
an intimacy with several learned men,
e of the first members of the Royal
le made the history and antiquities of
is peculiar study; and contributed
e assistance to the famous Monasticon
Anglicanum. He succeeded to several good estates, but law-suits and other misfortunes consumed them all, so that he was reduced to absolute want. In this extremity he found a valuable benefactress in lady Long, of Dracot, who gave him an apartment in her house, and supported him till his death, which happened about A. D. 1700. He was a good Latin poet, and an excellent naturalist, but somewhat credulous, and tinctured with superstition. He wrote, 1. Miscellanies. 2. A Perambulation of the county of Surry, in five volumes, 8vo. 3. The Life of Mr. Hobbes of Malmsbury. 4. Monumenta Britannica, or a Discourse concerning Stonehenge, and Roll-Rich Stones in Oxfordshire. 5. Architectonica Sacra. 6. The Natural History of Wiltshire. 7. Universal Education, and several other works still in MS.

AUBRIOT (Hugo), a French reformer, from whom the appellation Hugonots. He was treasurer of the finances, and mayor of Paris; and under his magistracy the Bastile was built, in 1369. Soon after he was accused of heresy, and sentenced to confinement between two walls, from which the Maillotins, a set of insurgents, released him, in 1381. He however left them, and retired into Burgundy, where he died the following year.

AUBUSSON (Peter d'), grand master of the knights of Rhodes, was born in La Marche, in 1423. Having entered into the order of St. John of Jerusalem, he was elected grand master, in 1476; and, in 1480, when the Turks made an attack upon the island, it was by his vigorous conduct they were repulsed. He obtained a cardinal's hat by very dishonorable means—the delivering up to the pope prince Zizim, brother of Bajazet, who had taken refuge in Rhodes, from the vengeance of the sultan. He died in 1503.

AU'BURN. Sometimes written Abron, which it is suggested may be the past participle of *to bren*, or *brin*, to burn; *quasi*, browned. Others contend for *alburn*, from whiteness, regarding it as a color inclining to white.

His faire *auberne* haire had nothing upon it but white ribbin. *Pembroke's Arcadia.*

Not wanton white, but such a manly colour
Next to an *abron*, tough, and nimble set;
Which shows an active soul.
Beaumont and Fletcher. The Two Noble Kinsmen.

These curious locks so aptly twin'd,
Whose every hair a soul doth bind,
Will change their *auburn* hue and grow
White and cold as winter snow.
Carew. Persuasions to Love

Close to her side, in radiant arms, a youth,
Who like the brother of the Graces moves,
His head uncas'd, discovers *auburn* locks
Curl'd thick, not flowing.
Glover's Leonidas, book ii.

And not a year but pilfers as he goes
Some youthful grace that age would gladly keep,
A tooth, or *auburn* lock. *Cowper's Poems.*

AUBUSSON, a small town of France, in the department of Creuse, thirty-seven miles north-east of Limoges. Its situation is very irregular, on the river Creuse, in a bottom surrounded with rocks and mountains.

AUCAGUREL, the capital of the kingdom of Adel, in Africa, seated on a mountain. Long. 44° 25′ E., lat. 9° 10′ N.

AUCH, a town of France, in the department of the Gers. It has a beautiful cathedral, and is sixteen leagues west of Toulouse.

Auch, or Ach, in the Gaelic, signifies a field of some extent, generally arable and horizontal. In composition, Auchen, Auchin, or, as it ought rather to be spelt, Auch-an, signifies the field of, the particle an, in Gaelic, being always the sign of the genitive, when placed between two substantives; although when prefixed to one substantive, it implies only the definite article the.

AUCHABER, or Achaber, a hill in Aberdeenshire, in the parish of Forgue, on the south-east declivity, of which there are the remains of an elegant circular Roman redoubt.

AUCHINLECK, in Gaelic, a field of rock; a parish of Scotland, in Ayrshire, eighteen miles in length, and two in breadth; memorable for being the birth-place, as well as the property, of the late James Boswell, Esq. The soil, except upon the rocks and banks of the rivers, is poor; but this is compensated by its abounding in excellent coals, free-stone, a black stone, which is fire-proof, used for building ovens, and other minerals. It has also a lead mine, which some think rather a silver mine, but it has never been wrought; and two mineral wells. It has the ruins of an ancient castle, of whose age there is no tradition; and is ornamented with an elegant mansion-house, built by the late lord Auchinleck.

AUCHINLILY Linn Spout, a cataract in the parish of Fintry, in Stirlingshire, over which the Carron rushes in its course from Carron bog to the carse of Falkirk.

AUCHLOSSEN, Loch of, a lake in the parish of Lumphanan, in Aberdeenshire, nearly a mile in length, and above half a mile broad at the south end. It produces eels and pikes; some of the latter six feet long, and twenty-five pounds in weight. It often overflows its banks in summer.

AUCHMUTY (Sir Samuel), lieutenant-general, G. C. B. and colonel of the 78th regiment of foot, entered the army in 1776, as a volunteer in the 45th regiment; and served with Sir W. Howe in North America, the three following campaigns. In 1783 he held a company in the 75th foot in the East Indies, and was present at the first siege of Seringapatam, under lord Cornwallis. In 1801 he was appointed adjutant-general to the expedition against Egypt. He was ordered out to South America in 1806, where he assumed the command of the troops, with the rank of brigadier-general; and in February, 1807, carried Monte Video by assault, after a most determined resistance; for which services he received the thanks of parliament. In 1809 he was appointed commander-in-chief of the Carnatic; and in 1811 reduced the settlements of Java and Batavia under the dominion of Great Britain, for which he again obtained the thanks of both houses. On his return to Europe, Sir Samuel succeeded Sir D. Baird, as chief of the staff in Ireland. His death, occasioned by apoplexy, took place August 11, 1822, in the sixty-sixth year of his age. His remains, after lying in state at Kilmainham hospital, were interred in the royal vault in Christ Church
dral, Dublin.

AUCHTER, a Gaelic word, signifyin
or upper, which in composition makes
many ancient names of places.

AUCHTERMUCHTY, a town of S
in Fifeshire, which was constituted a roya
by James IV. confirmed by James VI. a
enjoys all the privileges, except that of
a representative in parliament. It ha
bailies, fourteen counsellors, a treasu
clerk; and four fairs, viz. on 21st Augu
Tuesday of November and April, and 13t
which last is one of the most considerable
for horses, cattle, &c. The church was
1780, and an elegant manse in 1792. T
manufacture is white and brown linens.

AUCKLAND, Bishop, a market tow
county palatine of Durham, with a pop
of near 2000. Here is the palace of the
of Durham, began in 1283, by bishop Be
is a noble, though irregular, structure. I
miles north-west of London, and ten mile
half south-west of Durham.

Auckland (William Eden, lord), was t
son of Sir Robert Eden, bart. of West Au
in the county of Durham. Educated
and Oxford, he was called to the bar by
ciety of the Middle Temple in 1769, and
panied the earl of Carlisle, in 1778, to n
terms with the revolted colonies of Ameri
was chief secretary during the same nob
viceroyalty in Ireland. In 1785 he w
ambassador extraordinary to negociate
mercial treaty with France; and in 17
formed a similar service with Spain.
he concluded, at the Hague, a treaty
Great Britain, the emperor, and the
Prussia, in settlement of the affairs of the
lands; and the same year he was create
Auckland, of the kingdom of Ireland.
he was advanced to the English peerag
same title. Lord Auckland was consi
able diplomatist, and is the author of
lowing works: The Principles of Pen
8vo. 1771; Five Letters to the earl of
8vo.; On the Population of England, in
to Dr. Price, 8vo.; View of the Treaty
merce with France, 8vo.; The History
Holland, 8vo.; Remarks on the War, 8v
and various speeches in the House of Lo
died in 1814.

AUC'TION, } Lat. *augeo*, *auct*
Auc'tionary, } Αὐξω, increase; *aucti*
Auc'tioneer. } creasing. Auction is
to those who will give the highest pric
article offered. After successive biddi
price constantly advancing, the last bidd
buyer.

> And much more honest, to be hir'd, an
> With *auctionary* hammer in thy hand;
> Provoking, to give more, and knocking th
> For the old household stuff, or picture's p
> *Dryden*
>
> Estates are landscapes, gaz'd upon aw
> Then advertis'd, and *auctioneer'd* away.
> *Cowper's Poems. The Task*, book

Auction, in old medical writings, th
ment of an animal body, whereby it is
in size.

TION, in Roman antiquity, was originally of sale, performed by the public crier sub , e. under a spear stuck up on the occand by a magistrate, who delivered the It was termed auctio, q. d. increase, behe goods were sold to him, qui plurimum geret, who bid most for them. The aucwas called Auctor; and the term auctoenoted the right of property which the sted in the purchaser. A spear being set he forum as the sign of an auction, the sub hastâ venire; (literally, to be sold he spear) denoted a sale by auction.

civil law, according to Huber, Prælecxviii. 2. 7. held private biddings, by or alf of the seller, to be fraudulent: and nciple was adopted by the courts of law country, in the days of Lord Mansfield, nclination to adopt the maxims of the le is well known; but latterly the legiseems to recognise the practice, by exsuch private biddings from the duty imn sales by auction. A sale, however, e supported where the purchaser was real bidder, and public notice was not the owner's intention to bid; but that otice is not essential to the validity of a there be a contest between one or more ders. (See Sugden's Law of Vendors). tch auction, the auctioneer commences ng a high price, and gradually reduces some person closes with his offer.

TORATI, in Roman antiquity, persons ered the lists as gladiators, and received r hired themselves to perform in the games.

RATI MILITES, soldiers bound by oath, receipt of wages, to serve in war. They posed to the exauctorati, who were dis- The payment they received for their was denominated auctoramentum.

ACIOUS,
CIOUSLY,
CIOUSNESS,
CITY.
Lat. *audax*, daring; from *audeo*, I dare. These words describe that bold enterprising incautious spirit, without deliberation, undertakes to try to

> asons at dinner have been sharp and sen- pleasant without scurrility, witty without n, *audacious* without impudency.
>
> *Shakspeare. Love's Labour Lost.*

> ng, cavilling upon mandates and directions, of shaking off the yoke and assay of disobe- specially, if in those disputings they which e direction speak fearfully and tenderly, and t are against it, *audaciously*.
>
> *Lord Bacon's Essays.*

> ll took his losse and dammage nothing neere , but rather made full reckning, that he had s it were) with a bait, and fleshed the *auda-* of the foolehastie consull, and of the soul- pecially.
>
> *Holland's Livy.*

> hen the wolf has torn a bullock's hide,
> wains, or ranch'd a shepherd's side;
> us of his *audacious* deed he flies,
> ps his quav'ring tail between his thighs.
>
> *Dryden's Virgil. Æn.* 11.

> wledge without justice ought to be called ather than wisdom, so a mind prepared to meet danger, if excited by its own eagerness, and not the public good, deserves the name of *audacity* rather than of fortitude.
>
> *Steele.*

AUDE, a department of France, bounded by that of Arriege on the west, Upper Garonne on the north-west, Tarn on the north, Herault on the north-east, the Mediterranean on the east, and the eastern Pyrenees on the south. It is named from the river.

AUDE, a river in France, which rises in the Cerdagne among the Pyrenees, and, running north by Alet, visits Carcassone, and, directing its course by Quillan and Limouse, falls into the Mediterranean, a little to the north-east of Narbonne. The Romans dug up gold from its banks and channel.

AUDEANISM, the same with anthropomorphism. See ANTHROPOMORPHITE.

AUDEBERT, Germain, a counsellor of Orleans, on whom the senate of Venice conferred the order of knight of St. Mark, for a panegyric in verse, upon the republic, written by him while at that city. Henry II. honored him with a patent of nobility. He died in 1598; and his poems were collected and published in 1602.

AUDEBERT, John Baptist, a French naturalist, and a celebrated engraver of natural history, was born at Rochefort, in 1759. So much did he excel in the just and elegant representation of animals, that his productions are accounted among the most valuable in the line. His first piece was L'Hist. Nat. des Singes des Makis et des Galeopithèques; a folio volume, published in 1800. This work drew the attention of the professors of the museum of natural history at Paris, who recommended it and the author in honorable terms to the minister of the interior. He did not live to enjoy the fruits of his labors: but died in 1800, while engaged in other works of equal splendor.

AUDEUS, or AUDIUS, the chief of the Audeans, obtained the name of a heretic, and the punishment of banishment, for celebrating easter in the manner of the Jews, and attributing a human form to the Deity. He died in the country of the Goths, about A. D. 370.

AUDIANISM, the system of Audius and his followers; particularly as to the belief of the human figure of the Deity. See ANTHROPOMORPHITES.

AU'DIBLE, *n.* & *adj.*
AU'DIBLY,
AU'DIENCE,
AU'DIENT.
Lat. *audio*, I hear; that which may be heard. Loud enough to be heard; sounding.

> But when this lady comen was
> To th' emperour, in his presence,
> She said aloud in *audience*.
>
> *Gower. Con. A.* book ii.

> Visibles are swiftlier carried to the sense than *audibles*; as appeareth in thunder and lightning, flame and report of a piece.
>
> *Bacon's Works, vol.* i.

> Therefore the Omnipotent
> Eternal Father (for where is not he
> Present), thus to his Son *audibly* spake.
>
> *Milton. Paradise Lost*, b. vii.

> Don Quixote did prosecute his discourse, in such sort, and with so pleasing terms, as he had almost induced his *audients* to esteem him to be at that time at least exempt from his frenzie.
>
> *Shelton's Trans. of Don Quixote.*

Audience Court; a court belonging to the archbishop of Canterbury, of equal authority with the arches court, though inferior both in dignity and antiquity. The original of this court was, because the archbishop of Canterbury heard several causes extrajudicially at home in his own palace; which he usually committed to be discussed by men learned in the civil and canon laws, whom he called his auditors; and so in time it became the power of the man, who is called causarum negotiorumque audientiæ Cantuarensis auditor, seu officialis. Cowel.

Audience Courts are chiefly concerned in deciding differences arising upon elections, consecrations, institutions, marriages, &c.

Audience is also the name of a court of justice established in the West Indies by the Spaniards, answering in effect to the parliament under the old government of France. These courts take in several provinces, called also audiences, from the names of the tribunal to which they belong.

Audience of Ambassadors: a ceremony observed in courts at the admission of ambassadors or public ministers to a hearing. In England, audience is given to ambassadors in the presence chamber: to envoys and residents, in a gallery, closet, or in any place where the king happens to be. Upon being admitted, as is the custom of all courts, they make three bows; after which they cover and sit down; but not before the king has covered and sat down, and has given them the sign to put on their hats. When the king does not wish to have tnem covered, and sit, he himself stands uncovered; which is taken as a slight. At Constantinople, ministers usually have audience of the prime vizier.

AUDIENDO et Terminando, a writ, or rather a commission to certain persons, when any insurrection or great riot is committed in any place, for the appeasing and punishment hereof.

AUDIENTES, or **Auditores**, in church history, an order of catechumens, consisting of those newly instructed in the mysteries of the Christian religion, and not yet admitted to baptism.

AUDIFRET (John Baptist), an eminent French geographer, born in 1657. He was employed on embassies to the courts of Mantua, Parma, and Modena; and was author of Ancient and Modern Geography, 3 vols. 4to, Paris, 1689. He died at Nancy, in 1733.

AUDIGUIER (Vital d'), a French nobleman, born at Menor, near Ville-franche de Rouergue, about 1565. Besides several other pieces, he wrote a treatise on Duels, printed at Paris in 1617; and Poems on different subjects, 2 vols. 8vo. 1614. He died in 1630.

AU'DIT, *v.* & *n.*
Au'ditor,
Au'ditory, *n.* & *adj.*
Au'ditress.

Lat. *audio*, I hear. To audit is to hear whatever may be said on the subject in hand with a view of passing a judgment; generally applied to the examination and passing of accounts by persons denominated auditors, but who are, perhaps, in these transactions, more properly, inspectors. Auditory applies to persons who hear, and sometimes to the place in which they are assembled.

In vain shall this be expected from our years; which the wise philosopher exclu being meet *auditors*, much less judges of true
Bp. Hall's Balm

Yet went she not; as, not with such disc
Delighted; or not capable her ear,
Of what was high: such pleasure she reserv
Adam relating, she sole *auditress.*

Met in the church, I look upon you, as an fit to be waited on (as you are) by both univ

Several of this *auditory* were, perhap strangers to the person whose death we now

Foh! 'twas a bribe that left it; he has to
Corruption! whoso seeks an *audit* here
Propitious, pays his tribute, game or fish,
Wild fowl or ven'son; and his errand speak
Cowper

Will make your very heart strings ak
With loud and everlasting clack,
And beat your *auditory* drum,
Till you grow deaf, or they grow dumb
Beattie. The Wolf and

AUDITA Querela, a writ which lie him who has taken a recognizance in th of a statute-staple, or the like, and has obtained, execution from the mayor and or judges, before whom it was entered, is granted by the lord chancellor, upon the exception suggested, to the judges bench, willing them to grant summon sheriff of the county where the credito his appearance at a certain day befor But the indulgence now shown by the granting a summary relief upon motion, of evident oppression, has almost rend writ useless, and driven it quite out of A late learned judge, Ch. J. Eyre, i. 428, states that the court will grant re motion in all cases where a party wo been entitled to relief by auditâ The legal student will find this subjec expounded in Mr. Serjeant Williams's Saunders's Reports, in the case of Turn vies, vol. ii. p. 137, d.

AUDITIONALIS Scholasticus, i of the middle age, an advocate who plea for his clients in audiences.

Auditors of the Revenue, or of th quer, officers who take the accounts who collect the revenue and taxes raised liament, the accounts of the sheriffs, es collectors, tenants, customers, &c. Th of the exchequer, an office enjoyed fo one of considerable trust. He is to fil ler's bills, by which they charge themsel all the monies received; and by warra the lord treasurer, or the commissione treasury, he draws all orders to be si him or them, for issuing forth all mo virtue of privy seals, which are record clerk of the Pells' office, and entered an in the auditor's office. He also, by w the lord treasurer, or commissioners of sury, makes debentures to such as have nuities or pensions, by letters patent king, out of the exchequer, and dire for payment to the tellers. He daily the state of the account of each teller, an

s the whole to the lords of the treasury.
elmas and lady-day the auditor of the
makes a declaration; that is, he de-
bstract of all accoumts and payments
the preceding half year, one for the
he treasury, and the other for the chan-
the exchequer. The office is holden

TORES, in church history, a branch of
hean sect, who were divided into electi
res; corresponding, according to some
clergy and laity; and according to
the faithful and catechumens among
cs. By the Manichean rule, a differ-
of life was prescribed to the elect from
auditors. The latter might eat flesh,
e, bathe, marry, traffic, possess estates,
stracy, and the like; all which things
dden to the elect. The auditors were
maintain the elect, and kneeled down
ir blessing. Beausobre observes, that
were ecclesiastics, and in general such
rofession of observing certain counsels,
ngelic; such as the clergy and monks,
were called the perfect by Theodoret.
ors were the laity, and so denominated
hey heard in the church, while others
instructed. See Audientes.
TORIUM, in the ancient churches, was
where the audientes stood to hear and
ted. The auditorium was the part now
is ecclesiæ. See Nave. In the primi-
the church was so strict in keeping
gether in that place, that the person
from thence in sermon-time was
the council of Carthage to be excom-

TORIUS Meatus, the auditory passage
ce of the ear, called also aurium alveare,
nt of the wax collected in it.
ory, in ancient churches. See Audi-

ory is also used for the bench whereon
ate, or judge, hears causes. At Rome,
trates had auditories, according to their
Those of the superior officers were
bunals; those of the inferior, subsellia.
nei had their auditories in the portico of
ial palace. Those of the Hebrews, at
of cities. The judges appointed by the
ords distributed justice under an elm,
as usually planted before the manor-
d served them for an auditory.
ory Nerves, the seventh pair, arising
medulla oblongata, and distributed, the
ear, the other to the tongue, eye, &c.
EY (Edmund), the son of Lord Aud-
op of Rochester and Hereford, under
II., was a man of great learning and
y. He gave £400 to Lincoln College,
ase lands, and was also a benefactor
lary's Church, Oxford. He died in

y (James, Lord Audley), one of the
heroes who fought under Edward III.
about 1314. In 1343 he was made
of Berwick. In 1353 he reduced a
t of the country of Valois in France;
present at the famous battle of Poictiers

in 1356; where, having obtained leave of Edward the Black Prince, to charge in front (in consequence of a vow he had made), he performed extraordinary feats of personal valor: but being at last dangerously wounded, was carried out of the field. In 1360 he again attended Edward III. to the wars in France; and after the peace, in 1361, was made constable of Gloucester Castle, governor of Aquitain, and seneschal of Poictou. He died April 1, 1386.

Audley (Sir Thomas), descended of an ancient family in Essex, was born in 1488; and, having the advantage of an university education, was taken notice of by Henry VIII. and appointed speaker of the House of Commons in 1529. Having pleased the king in this station, he promoted him farther next year; and in 1532, appointed him Lord keeper of the Great Seal, on the resignation of the famous Sir Thomas More. In 1533 he made him Lord Chancellor, with suitable emoluments. In 1535 Audley sat in judgment, and pronounced sentence of death upon Sir Thomas More, as guilty of high treason, in refusing to acknowledge the king's supremacy in the church! Upon receiving sentence, Sir Thomas More said 'he had studied this subject for seven years, but could find no authority for a layman being head of the church;' to which Audley gave this decisive answer; 'Sir, will you be reckoned wiser, or of a better conscience, than all the bishops, the nobility, and the whole kingdom?' For these and the like services, Henry created Audley a baron and a knight of the garter in 1538. He died in 1544.

Audley Castle, a fort of Ireland, built on a promontory in the county of Down, which has a prospect of the whole lake of Strangford.

Audley Road, a part of Strangford Bay, on the west side, on the coast of Down in Ulster, where ships may lie in safety.

AUDRAN (Benoit, or Benedict), the second son of Germain Audran, was born at Lyons in 1661, where he learned the first principles of design and engraving under his father. But soon after going to Paris, his uncle Gerard Audran took him under his tuition; and he profited so greatly by his instructions, that though he never equalled the sublime style of his tutor, yet he deservedly acquired great reputation. Abbe Fontenai says, 'We admire in his works a share of those beauties which we find in the engravings of the illustrious Gerard.' He was appointed the king's engraver, received the royal pension, was made an academician, and admitted into the council, in 1715. He died unmarried at Louzouer, where he had an estate, in 1721. His manner was founded upon the bold clear style of his uncle. His outlines were firm and determined; his drawing correct; the heads of his figures are in general very expressive; and the other extremities well marked. His works, compared with those of his uncle, appear to want that mellowness and harmony so conspicuous in the latter; and the round dots with which he finishes his flesh upon the lights are often too predominant. In his most finished plates the mechanical part of the engraving is extremely neat, and managed with great taste. One of his neatest prints is that of Alexander sick, drinking from the cup which his physician presents to him; a circular plate, from Le Sueur.

Audran (Benoit), the second engraver of that name, the son of John Audran, and nephew to the former Benoit; was also established at Paris. A little attention will easily distinguish his works, which are vastly inferior to those of his uncle. One of the best of his plates is the descent from the cross, from a picture of Poussin.

Audran (Carl), an eminent French engraver, brother, or cousin to Claude, was born at Paris in 1594. In his infancy he discovered much taste for the arts; and to perfect himself in engraving he went to Rome, where he produced several prints that did him great honor. At his return, he adopted that species of engraving which is performed with the graver only. He settled at Paris, where he died in 1674, unmarried. The abbé Marolles, who speaks of him with great praise, attributes 130 prints to him: amongst which, the annunciation, a middling sized plate, upright, from Annibale Caracci; and the assumption, in a circle, from Dominichino, are the most esteemed. In the early part of his life he marked his prints with C, for Carl, till his brother Claude published some plates with the same initial, when, for distinction sake, he used the letter K, or wrote his name Karl.

Audran (Claude), a French engraver, the first of the celebrated artists of that name, was the son of Lewis Audran, an officer belonging to the wolf hunters in the reign of Henry IV. of France; and was born at Paris in 1592. Although he never made any great progress in the art, yet he had the honor to be the father of three great artists, Germain, Claude, and Gerard. The last of whom has immortalised the name of the family. He died at Lyons, in 1677.

Audran (Claude), the second son to Claude, was born at Lyons in 1639, and went to Rome to study painting; where he succeeded so well, that at his return he was employed by Le Brun to assist him in the battles of Alexander, which he was then painting for Louis XIV. He was received into the Royal Academy in 1675, and died unmarried at Paris in 1684. His virtues (says abbé Fontenai) were as praise-worthy as his talents.

Audran (Gerard), the most celebrated artist of his family, was the third son of Claude, and born at Lyons in 1640. He learned from his father the first principles of design and engraving at Lyons; and went to Paris, where his genius soon began to manifest itself. Le Brun employed him to engrave the battle of Constantine, and the triumph of that emperor; and for these works he obtained apartments at the Gobelins. At Rome he is said to have studied under Carlo Maratti, to perfect himself in drawing; and in that city he engraved several fine plates. M. Colbert was so struck with the beauty of Audran's works while he resided at Rome, that he persuaded Louis XIV. to recal him. On his return, he was appointed engraver to the king. In 1681 he was named counsellor of the Royal Academy; and died at Paris in 1703. He had been married, but left no male issue. The greatest excellency of this artist, above that of any other engraver, was, that though he drew admirably himself, yet he contracted no manne of his own; but transcribed on copper simply with great truth and spirit, the style of the masters whose pictures he copied. On viewing hi prints, we lose sight of the engraver, and naturally say, it is Le Brun, Poussin, Mignard, o Le Sueur, &c. as we turn to the prints which he engraved from those masters. 'This sublime artist,' says the abbé Fontenai, 'far from conceiving that a servile arrangement of strokes, and the too frequently cold and affected clearness of the graver, were the great essentials of historical engraving, gave worth to his works by a bold mixture of free hatchings and dots, placed together apparently without order, but with an inimitable degree of taste; and has left to posterity most admirable examples of the style in which grand compositions ought to be treated. His greatest works, which have not a very flattering appearance to the ignorant eye, are the admiration of true connoisseurs and persons of fine taste. He acquired the most profound knowledge of the art, by the constant attention he bestowed upon the science of design, and the frequent use he made of painting from nature. He knew how to penetrate into the genius of the painter he copied from; often improved upon, and sometimes even surpassed him. Without exception, he was the most celebrated engraver that ever existed in the historical line. We have several subjects which he engraved from his own designs, that manifested as much taste as character and facility. But, in the battles of Alexander, he surpassed even the expectations of Le Brun himself.' These consist of three very large prints, length-ways, each consisting of four plates, which join together, from Le Brun, viz. The passage of the Granicus; The battle of Arbela; and Porus brought to Alexander, after his defeat. To this set are added two large prints, length-ways, on two plates each, also from Le Brun, viz. Alexander entering the tent of Darius, and the triumphal entry of Alexander into Babylon. The former was engraved by Gerard Edelink, and the latter by Gerard Audran. Of all these plates, those impressions are most esteemed which have the name of Goyton the printer marked upon them.

Audran (Germain), the eldest son of Claude, was born in 1631 at Lyons, where his parents then resided. Not content with the instructions of his father, he went to Paris, and perfected himself under his uncle Carl. Upon his return to Lyons, he published several prints which did him great honor. His merit was in such estimation, that he was made a member of the academy, and chosen a professor. He died at Lyons in 1710, and left behind him four sons, all artists; namely, Claude, Benoit, John, and Lewis.

Audran (John), the third son of Germain Audran, was born at Lyons in 1667; and, after being instructed by his father, went to Paris to perfect himself in the art under his uncle Gerard. At the age of twenty he began to display his genius in a surprising manner; and his success was such, that in 1707 he obtained the title of engraver to the king, and had a pension allowed him, with apartments in the Gobelins and the following year he was made a member of the Royal Academy. He was eighty years of age before he quitted the graver; and near ninety when he died, at the apartments assigned him by the king. He left three sons, one of whom was also an engraver. 'The most masterly and best prints of this artist (in Mr. Strutt's opinion) are those which are not so pleasing to the eye at first sight. In these the etching constitutes a great part; and he has finished them in a bold rough style. The scientific hand of the master appears in them on examination. The drawing of the human figure, where it is shown, is correct. The heads are expressive and finely finished; the other extremities well marked. He has not, however, equalled his uncle. He wants that harmony in the effect; his lights are too much and too equally covered; and there is not sufficient difference between the style in which he has engraved his back grounds and his draperies. This observation refers to a fine print by him of Athaliah, and such as he engraved in that style. At other times he seems almost to have quitted the point, and substituted the graver. But here I think he has not so well succeeded. The effect is cold and silvery: see for example, the Andromache from Sylvestre. One of his best finished prints, in this neat style, seems to be Cupid and Psyche from Ant. Coypel.'

Audran (Lewis), the last son of Germain Audran, was born at Lyons in 1670; from whence he went to Paris in 1712, before he had produced any great number of prints. The most esteemed are his seven acts of mercy, on seven middling-sized plates, from Sebastian Bourdon.

AUDREY, or Ethelreda, an Anglo-Saxon princess, wife of Egfrid, king of Northumberland. She turned abbess, and was canonized after her death.

AVE, } A corruption of the Latin
Ave Mary. } *Ave Maria*, Hail Mary! A reverential address used by Catholics to the Virgin Mary.

> All his mind is bent on holiness,
> To number *Ave Marias* on his beads. *Shakspeare.*

Ave Mary. In the Romish church, their chaplets and rosaries are divided into so many ave-marias and so many paternosters. It has been observed by Bingham and others, that among all the short prayers used by the ancients before their sermons, there is not the least mention of an ave-mary; and that its original can be carried no higher than the beginning of the fifteenth century, when Vincentius Ferrerius, who was a celebrated preacher, first used it before his discourses; from his example it obtained such authority, as not only to be prefixed to all the sermons of the Romish preachers, but to be joined with the Lord's Prayer in their breviary.

AVEIRO, a considerable town of Portugal, in Beira, seated near the head of a small gulf at the mouth of the Vouga; which forms a haven with a bar, over which vessels may pass that do not draw above eight or nine feet water. The city stands in a long plain, well watered, and very fertile. This plain is nine miles broad, from Porto to Coimbra; and is bounded on the east by a chain of mountains called Sierra d'Alcoba, which reach from the one town to the other. Near this city salt is made in sufficient quantity to serve two or three provinces. It has a nunnery, where none are admitted but the daughters of the nobility. Many English are settled here, on account of the thriving trade in oil, salt, and fish, especially sardels. It lies thirty miles S. of Oporto. Long. 8° 30′ W. lat. 40° 40′ N.

AVEIRON, a department of France, bounded by that of Cantal on the north, by those of Lozere and Gard on the east, Herault and Tarn on the south, and Lot on the west. It is named from the river.

Aveiron, a river of France, which rises near Severac, and flowing by Rhodes and Villefranche, falls into the Garonne below Montauban.

Avel, avello, Lat. to pull away.

> The beaver in chase makes some divulsion of parts, yet are not these parts *avelled* to be termed testicles. *Brown.*

AVELLA, a town of Campagni di Roma.

Avella. See Aquila.

AVELLANA, in botany, nux pontica, filbert, a sort of nut, anciently so called, from Avellanum, a town of Campania, where they abounded. See Avellino It is the corylus avellana of Linnæus. Plin. l. 25, c. 23.

Avellana Purgatrix, in the materia medica, the fruit of a species of ricinus.

AVELLANDA, in botany, a name given by the Spaniards to the roots of the Torsi, or sweet cyperus. These are esculent, and of a very delicious taste: they seem to have had the name from their likeness to the avellana, or hazel nut. Garcias, and some others, have thought that the curcas of Malabar was the same with the avellanda of Europe. But this does not seem to be the case; for the curcas, though of the same size and shape with the avellanda, has a hard coat like the common filbert.

AVELLANE, in heraldry, a cross, the quarters of which somewhat resemble a filbert-nut. Sylvanus Morgan says, that it is the cross which ensigns the sovereign's globe.

AVELLINO, a city of Italy, in the kingdom of Naples, with a bishop's see. It was almost ruined by an earthquake in 1694. It is, however, at present a pretty considerable place, extending a mile in length down the declivity of a hill, with ugly streets, but tolerable houses. The churches have nothing to recommend them, being crowded with monstrous ornaments in the barbarous style, which the Neapolitans seem to have borrowed from the Spaniards. The cathedral is a poor building, in a wretched situation, with little to attract the eye. The good catholics need not run to Naples to see the blood of St. Januarius; for they have a statue of St. Lawrence, with a phial of his blood; which, for eight days in August, entertains them here with a similar miraculous liquefaction. The only edifice of note is a public granary, of the Composite order, adorned with antique statues, and a very elegant bronze one of Charles II. of Spain, while a boy, cast by Cavalier Cosimo. The number of inhabitants amounts to 8000, some say 10,000. The bishop's revenue is about 6000 ducats (£1125) a-year. The magistracy consists of a syndic and four eletti, all annual; which offices are engrossed by a certain number of families of distinction. Avellino has a considerable manufacture of cloth of various qualities and colors, but chiefly blue. Many wealthy merchants have a concern in this business. The second article of trade is maccaroni, and paste of many kinds, which, being of an excellent quality, are in high repute all over the country. Wooden chairs are also made and sold in great quantities. Avellino abounds with provisions of every sort; each street is supplied with wholesome water; but the wine is indifferent. The soil of this district, which consists chiefly of volcanic substances, produces little corn, but fruit in abundance, of which the apple is deservedly held in great esteem. The most profitable, however, of all its fruit-trees is the hazel. Nut-bushes cover the face of the valley, and in good years bring in a profit of 60,000 ducats (£11,250). The nuts are mostly of the large round species of filbert, which we call Spanish. These bushes were originally imported into Italy from Pontus, and known among the Romans by the appellation of nux Pontica, which, in process of time, was changed into that of nux Avellana, from the place where they had been propagated with the greatest success. The proprietors plant them in rows, and by dressing, form them into large bushes of many stems. Every year they refresh the roots with new earth, and prune off the straggling shoots with great attention. Between Avellino and Benevento is the Val di Gargano, better known in history by the name of Furcæ Condinæ, where the Romans were blocked up by the Samnites, and compelled to pass under the yoke, in the 433d year of Rome. Avellino is situated twenty-five miles N. E. of Naples. Long. 15° 20′ E., lat. 41° 11′ N.

AVELTON. See ALTON.

AVEN, one of the Orkney Islands, better known by the name of Sanda.

AVEN, the Scriptural name of several ancient places; particularly, 1. of Bethel, by way of metaphor, Hos. x. 8. 2. of Heliopolis, a city of Egypt, Ezek. xxx. 17. See HELIOPOLIS. 3. of a plain in Syria, between Lebanon and Antilibanus, Amos, i. 5; supposed to be the same with Baal-beck, or the valley of Lebanon. See BAAL-BECK.

AVENA, OATS, in botany, a genus of the dyginia order, and triandria class of plants; ranking in the natural method under the fourth order, gramina. The calyx has a double valve, and the awn on the back is contorted. There are thirteen species, of which the first six following are natives of Britain: viz. 1. A. elatior, the tall oat-grass. 2. A. fatua, the bearded oat-grass. 3. A. flavescens, the yellow oat-grass. 4. A. nuda, the naked oat. 5. A. pratesis, the meadow oat-grass. 6. A. pubescens, the rough oat-grass. 7. A. sativa, the common oat cultivated in our fields. It is remarkable, that the original native place of this plant is almost totally unknown. Anson says, that he observed it growing wild or spontaneously in the island of Juan Fernandez: but a vague observation from a single author is not to be depended on.

For the culture, see HUSBANDRY.
article of the materia medica.
from them have a kind of soft
quality; by which they obtund acri
mors, and prove useful in inflam
eases, coughs, hoarseness, and exu
the fauces.

AVENACEOUS, something bel
partaking of the nature of oats.

AVENANT, agreeable; beautiful

AVENCHE, an ancient city of
in the canton of Bern, formerly the
Switzerland, but now greatly deca
four miles S. W. of Murat, and
Bern. Long. 6° 52′ E., lat. 46° 50′

AVEN'GE, v. & n. } Fr. *venge*
AVEN'GEANCE, } *dicare* (*vim*
AVEN'GEMENT, } sius), to rep
AVEN'GER, } force. To
AVEN'GERESS. } measure all
Jewish law—'a tooth for a tooth,'
nounce vengeance, to retaliate an inj
punishment not sanctioned by good
benign spirit of Christianity.

> That he might work th' *avengement* f
> On those two caitives, which had bred h
>
> All those great battles (which thou b
> Through strife and bloodshed, and *aven*
> Now praised) hereafter thou shalt repen
> *Id.*
>
> There that cruel queen *avengeress*
> Heap on her new waves of weary wr
>
> This neglected, fear
> Signal *avengeance*; such as over
> A miser.
>
> I will *avenge* me of mine enemies.
>
> They stood against their enemies
> *avenged* of their adversaries.
>
> I will *avenge* the blood of Jezreel, u
> of Jehu.
>
> Till Jove, no longer patient, took h
> T' *avenge* with thunder your audaciou
>
> The just *avenger* of his injured ances
> torious Louis, was darting his thunder.
>
> But just disease to luxury succee
> And ev'ry death its own *avenger* br
> Too daring bard! whose unsuccess
> Th' immortal Muses in their art defie
> Th' *avenging* Muses of the light of da
> Depriv'd his eyes, and snatch'd his v
>
> The day shall come, that great *aven*
> When Troy's proud glories in the du
>
> Send thy arrows fort
> Strike, strike these tyrants and *avenge*
>
> Little did I dream that I should have
> such disasters fallen upon her [the quee
> in a nation of gallant men—in a nati
> honour and of cavaliers. I thought
> swords must have leaped out of their
> *avenge* even a look that threatened her
> But the age of chivalry is gone.

AUENHEIM, a town of Germ
circle of Suabia, near Offenbourg.

AVENIO an ancient town of C
one of the most opulent in Gallia N
now called Avignon.

AVENPACE, a Spanish Moor of the twelfth century, who wrote a commentary upon Euclid; but having adopted the peripatetic philosophy, he attempted to explain the Koran, by the system of Aristotle, for which he was imprisoned at Corduba.

AVENS, in botany. See CARYOPHYLLUS.

AVENTINE (John), was born in 1466, in Abensperg, in Bavaria. He studied first at Ingolstadt, and afterwards at Paris. In 1503 he taught eloquence and poetry at Vienna; and in 1507 he taught Greek at Cracow, in Poland. In 1509 he read lectures on Cicero, at Ingoldstadt; and in 1512 was appointed preceptor to the princes Lewis and Ernest, sons of Albert the Wise, duke of Bavaria; and travelled with the latter. After this he wrote the Annals of Bavaria, being encouraged by the dukes, who settled a pension on him. This work, which gained great reputation, was first published in 1534, by Jerome Ziegler, professor of poetry in the university of Ingolstadt; and afterwards at Basil, in 1580, by Nicolas Cisner. In 1529 he was forcibly taken out of his sister's house at Abensperg, and hurried to a jail; the true cause of which violence was never known; but it would probably have been carried to a much greater length, had not the duke of Bavaria interposed, and taken this learned man under his protection. Mr Bayle remarks, that the incurable melancholy, which from this time possessed Aventine, was so far from determining him to lead a life of celibacy, as he had done till he was sixty-four, that it induced him to think of marrying. He advised, however, with two of his friends, and consulted certain passages of the Bible relative to marriage. The result was, that it was best for him to marry; and having lost too much time, considering his age, he took the first woman he met with, who happened to be his own maid, ill-tempered, ugly, and extremely poor. He died in 1534, aged sixty-eight; leaving one daughter, who was then but two months old.

AVENTINE, or AVENTINUS, one of the seven hills on which Rome was built. It was also called Murcius, from Murcia, the goddess of sloth, who had a little chapel there; Collis Dianæ, from the temple of Diana; and Remonius, from Remus, who was buried there. It was taken within the compass of the city by Ancus Marcus. To the east it had the city walls; to the south the Campus Figulinus; to the west the Tiber; and to the north Mons Palatinus; in circuit two miles and a quarter.

AVENTURÆ, in our ancient writers, signify tournaments, or military exercises on horseback.

AVENUE. Fr. *venir, avenir;* participles *venu, avenu;* Lat. *venire*, to come. Approach, opening, passage.

> Good guards were set up, at all the *avenues* of the city, to keep all people, from going out.
>
> *Clarendon.*

> The regulations that are established at Thebes for keeping the *avenues* free from incumbrances, maintaining the aqueducts and rendering the baths convenient, for the cultivation of arts, and for the security of the public, are the most excellent that can be imagined.
>
> *Hawkesworth's Telemachus.*

> Truth is a strong hold, and diligence is laying siege to it: so that it must observe all the *avenues* and passes to it.
>
> *South.*

AVENUE, in fortification, an opening or inlet into a fort, bastion, or the like place, or the passes and ways to and from it.

AVENUE, in gardening, a walk planted on each side with trees, and leading to a house, garden-gate, wood, &c. and generally terminated by some distant object. All avenues that lead to a house ought to be at least as wide as the whole front of the house; if wider, they are better still; and avenues to woods and prospects ought not to be less than sixty feet wide. The trees should not be planted nearer to one another than thirty-five feet, especially if they are of a spreading kind; and the same ought to be the distance, if they are for a regular grove. The trees most proper for avenues with us, are the English elm, the lime, the horse-chestnut, the common chestnut, the beech, and the abele. The English elm will do in all grounds, except such as are very wet and shallow; and this is preferred to all other trees, because it will bear cutting, heading, or lopping, in any manner, better than many others. The rough or smooth Dutch elm is approved by some, because of its quick growth; this is a tree which will bear removing very well; it is also green almost as soon as any plant whatever in spring, and continues so as long as any. It makes an incomparable hedge, and is preferable to all other trees for lofty espaliers. The lime is valued for its natural growth and fine shade. The horse-chestnut is proper for all places that are not much exposed to rough winds. The common chestnut will do very well in a good soil; and rises to a considerable height when planted somewhat close; though, when it stands single, it is rather inclined to spread than to grow tall. The beech is a beautiful tree, and naturally grows well with us in its wild state; but it is less to be chosen for avenues, because it does not bear transplanting, and is very subject to miscarry. The abele is fit for any soil, and is the quickest grower of any forest-tree. It but seldom fails in transplanting; and succeeds very well in wet soils, in which the others are apt to fail. The oak is little used for avenues, because of its slow growth. The old method of planting avenues was with regular rows of trees, and this has been the practice till of late: but we have now a much more magnificent method, by setting the trees in clumps, making the opening much wider, and placing the clumps at about 300 feet distant from one another. In each of these clumps there should be planted either seven or nine trees; but this is only proper where the avenue is to be of some considerable length; for in short walks single rows of trees look better. The avenues made by clumps are fittest of all for parks. The trees in each clump should be planted about thirty feet asunder; and a trench should be thrown up round the whole clump, to prevent the deer from coming to the trees to bark them.

AVENZOAR, or EBN-ZOAR, Abu Merwar Abdalmalec, an eminent Arabian physician, who flourished about the end of the eleventh and beginning of the twelfth century. He was of noble descent, and born at Seville, where he exercised his profession with great reputation. His grandfather and father were both physicians. The large estate he inherited, set him above practising for gain: he therefore took no fees from the poor, or from artificers, though he refused not the presents of princes and great men. His liberality was extended even to his enemies; for which reason he used to say, that they hated him not for any fault of his, but rather out of envy. Dr. Friend writes, that he lived to the age of 135; that he began to practise at forty, others say twenty, and had the advantage of a longer experience than almost any one ever had, for he enjoyed perfect health to his last hour. Avenzoar was contemporary with Averroes, who, according to Leo Africanus, heard the lectures of the former, and studied physic under him; this seems the more probable, because Averroes more than once gives Avenzoar a very high and deserved encomium, calling him 'admirable, glorious, the treasure of all knowledge, and the most supreme in physic, from the time of Galen to his own.' Avenzoar, notwithstanding, is by the generality of writers reckoned an empiric: but Dr. Friend observes, that this character suits him less than any of the Arabians. 'He was bred,' says he, 'in a physical family, his father and grandfather being both practitioners. He had a regular education; and not only learned what properly belongs to a physician, but every thing which relates to pharmacy or surgery.' Dr. Friend adds, 'that he was averse to quackery, rejected the idle superstition of astrologers; and throughout all his work professes himself so much of the dogmatical sect, that he has a great deal of reasoning about the causes and symptoms of distempers; and as in his theory he chiefly follows Galen, so he quotes him upon all occasions. Notwithstanding he is so Galenical, there are several particulars in him which seldom or never occur in other authors; and there are some cases which he relates from his own experience, which are worth perusing.' He wrote a book entitled Tayassir fi'lmadâwât w'altadbâr, i. e. The method of preparing medicines and diet; which is much esteemed. This work was translated into Hebrew, A.D. 1280, and thence into Latin by Paravicius, whose version has had several editions. The author added a supplement to it, under the title of Jâmê, or a collection. He also wrote a treatise Fi'ladwiyat wa'laughdiyat, i. e. Of Medicines and Food; wherein he treats of their qualities.

Avenzoar, or **Ebn-zoar**, the son of the former, followed his father's profession; was in great favor with Almanzur, emperor of Morocco, and wrote several treatises on physic.

AVER', } Fr. *averer;* Lat. *vereor*, to
Aver'ment. } fear with reverence. Compounded of *ve pro valide*, greatly, and *reor*, to think. To declare positively, solemnly.

> The reason of the thing is clear;
> Would Jove the naked truth *aver*. *Prior.*

> Then vainly the philosopher *avers*,
> That reason guides our deeds, and instinct theirs;
> How can we justly diff'rent causes frame,
> When the effects entirely are the same? *Id.*

> To avoid the oath, for *averment* of the
> of some estate, which is eigne, the party
> pardon.

> We may *aver*, though the power of God
> the capacities of matter are within limits.

> That which Bucer and his associates *av*
> a hundred years ago, we still say and mai
> which was the truth then, hath been so
> and shall be to all eternity. *Bp. Hall's P*

AVERA, in our ancient customs
work of a ploughman, or other labor
the king's tenants in his demesne la
obliged to pay the sheriff.

AV'ERAGE. Low Lat. *averagium*
or obtain a mean proportion by coll
maxima and minima, or the highest a
prices.

Average, in commerce and navi
divided into three kinds. 1. The simpl
which consists in the extraordinary ex
curred for the ship alone, or for the
dizes alone; such as the loss of ancho
and rigging, occasioned by the comn
dents at sea; the damages which h
merchants by storm, prizes, shipwreck
rotting; all which must be paid and
the thing which suffered the damage.
large and common average, being those
incurred, and damages sustained, for
mon security of the merchandizes and
consequently to be borne by the ship a
and to be regulated upon the whole.
number, are the goods or money give
ransom of the ship and cargo, thing
overboard for the safety of the ship
pences of unloading, for entering into
harbour, and the provisions and hire
sailors, when the ship is put under an
3. The small averages, which are the
for towing and piloting the ship out o
harbors, creeks, or rivers, one-third
must be charged to the ship, and two-
the cargo.

Average, in agriculture, a term
the farmers in many parts of Englan
breaking of corn-fields.

AVERANI (Benedict), a native of
who became Greek professor at Pisa, a
several critical tracts on classical auth
died in 1707. After his death, his w
collected and printed at Florence, in 3
1717.

Averani (Joseph), brother to Bene
born in 1662. He became professor
Pisa, but was particularly devoted to
of mathematics and natural philoso
died in 1738. Two volumes of his o
the academy at Florence, and some ot
were printed after his death.

AUERBACH, a town of Upper S
Voigtland, fourteen miles south of Zwi
sixty W. S. W. of Dresden. On a
about four miles from this place, is
species of topaz, called kings-crown,
said to excel the Spanish and Bohemia
ness, and to equal the oriental in brill

AVER-CORN, in ancient writings,
as by custom is brought by the ten
riages to the lord's granary.

12

Thomas Tegg, Cheapside.

AVERDUPOIS. See Avoirdupois.

AVERDY (Clement Charles de l'), an eminent French statesman, was born at Paris in 1720. He was counsellor of parliament, minister and comptroller general of the finances under Louis XV. His reputation was so great, that his appointment gave general satisfaction to the people, but falling into some mismanagement, he requested his dismission in 1764. He afterwards retired to his estate, and occupied himself in agricultural pursuits. Though he took no part in the revolution, but kept perfectly neutral, yet he was arrested and brought to the guillotine in 1793. He wrote, 1. Suite des Experiences de Gambais sur le bleds noirs ou cariés, 8vo. 2. Memoire sur le Procés criminal de Robert d'Artois, Comte de Beaumont pair de France.

AVERIA, in our old law books, properly signify oxen or horses used for the plough; but in a general sense any cattle. When mention is made of one beast, they say 'quidam equus, vel quidam bos;' when of two or more they do not say equi or boves, but averia.

Averia, in commerce, a branch of the Spanish revenue, signifying a tax paid for convoys to guard the ships trading to America. It was first imposed when Sir Francis Drake made his voyage to the South Sea.

AVERIIS Captis in Withernam, a writ for taking cattle when unlawfully distrained and driven out of the country, so that they cannot be replevied by the sheriff.

AVER-LAND, in our old writers, such lands as the tenants ploughed with their cattle, and manured cum averiis suis, for the use of a monastery, or the lords of the soil.

AVERNAT, a sort of grape. See Vine.

AVERNI; from the privative *α*, and *ορνις*, a bird, as intimating that birds could not fly over them, but dropped down dead; among the ancient naturalists certain lakes and other places which infect the air with poisonous steams or vapors; called also mephites. Averni are said to be common in Hungary, on account of its abundance of mines. The Grotto del Cani, in Italy, is a famous one. See Avernus.

AVERNO, the ancient Avernus, a lake of Lavoro in Naples, lying in a narrow valley, two miles long and one broad. It is 180 feet deep in some places, and the old walls standing upon its banks are supposed to be the ruins of a temple of Apollo. Vibus Sequester, and other ancient authors represented it as bottomless. Mr. Chambers says the modern Italians call it Lago di Tripergola. See the next article.

AVERNUS, a lake of Campania in Italy, near Baia, famous among the ancients for its poisonous qualities. It is described by Strabo as lying within the Lucrine bay, deep and darksome, surrounded with steep banks that hang threatening over it, and only accessible by one narrow passage. Black, aged groves stretched their boughs over the watery abyss, and with impenetrable foliage excluded almost every ray of wholesome light; mephitic vapors ascending from the hot bowels of the earth, being denied free passage to the upper atmosphere, floated along the surface in poisonous mist; and killed even the birds that attempted to fly over it. These circumstances produced horrors fit for the gloomy votaries of the infernal deities. A colony of Cimmerians, as well suited to the rites as the place itself, cut dwellings in the bosom of the surrounding hills, and officiated as priests of Tartarus. Superstition, always delighted in dark ideas, early and eagerly seized upon this spot, and represented a cavern near it called the Sybil's cave, as the mouth of the infernal regions. Hither she led her trembling votaries to celebrate her dismal orgies; here she evoked the manes of departed heroes—here she offered sacrifices to the gods of hell, and attempted to dive into the secrets of futurity. Poets enlarged upon the popular theme, and painted its awful scenery with the strongest colors of their art. Homer brings Ulysses to Avernus, as to the mouth of the infernal abodes, and, in imitation of the Grecian bard, Virgil conducts his hero to the same ground. Whoever sailed thither, first did sacrifice, and endeavoured to propitiate the infernal powers, with the asistance of some priest, who attended upon the place, and directed the mystic performance. Within, a fountain of pure water broke out just over the sea, but which nobody tasted, as it was fancied to be a vein of the river Styx; near this fountain was the oracle; and the hot waters, frequent in these parts, were supposed to be branches of the burning Phlegethon. The holiness of these shades remained unimpeached for many years. Hannibal marched his army to offer incense at this altar; though it may be suspected he was led to this act of devotion rather by the hopes of surprising the garrison of Puteoli, than by his piety. After a long reign of undisturbed gloom and celebrity, a sudden glare of light was let in upon Avernus; the horrors were dispelled, and with them vanished the sanctity of the lake: the axe of Agrippa brought its forest to the ground, disturbed its sleepy waters with ships, and gave vent for all its malignant effluvia to escape. The virulence of these exhalations, as described by ancient authors, has appeared so very extraordinary, that modern writers, who know the place in a cleared state only, charge these accounts with exaggeration; but Swinburn thinks them entitled to more credit; for even now, he observes, the air is feverish and dangerous, as the jaundiced faces of the vine-dressers, who have succeeded the Sybils and the Cimmerians in the possession of the temple, most ruefully testify. Boccaccio relates, that during his residence at the Neapolitan court, the surface of this lake was suddenly covered with dead fish, black and singed, as if killed by some subaqueous eruption of fire. The changes of fortune in these lakes, is singular: in the splendid days of imperial Rome, the Lucrine was the chosen spot for the brilliant parties of pleasure of a voluptuous court: now, a slimy bed of rushes covers the scattered pools of this once beautiful sheet of water; while the once dusky Avernus is clear and serene, offering a most alluring surface and charming scene for similar amusements. Opposite to the temple is a cave usually styled the Sybil's grotto; but apparently more likely to have been the mouth of communication between Cuma and Avernus, than the abode of a prophetess; especially as the Sybil is positively said by historians to have dwelt in a cavern under the Cumæan citadel. Mr. Eustace (Classical Tour) describes the Avernus as a circular sheet of water, about a mile and a half in circumference, and in many places nearly 190 feet deep; surrounded by ground low on the one side, on the other high, but not steep, in rich cultivation, and slightly wooded. On the southern bank stands a large and lofty octagonal building, vaulted, and of brick, with halls adjoining. This probably was the temple of Proserpine, or of Avernus itself. It is surrounded by vineyards. On the northern bank, under a steep, overhung with shrubs and brambles, is a subterraneous gallery, still called the Grotto della Sibilla. The first gallery runs under the Monte Grillo, in the direction of Baiæ. It opens into a second on the right, tending towards Cumæ; after some distance, a piece of water crosses it, called the Sybil's bath. The ground then rises rapidly, and all farther progress is stopped by the fallen walls. The situation and appearance of the cavern agree very closely with the description of Virgil. It branched out into several other galleries; and probably furnished him with much of the scenery in the sixth book. The Lago di Tripergola, as it is called at present, has lost all claim to its former appellation, since in winter it abounds in water-fowl. There can be no doubt that the lake is the crater of an exhausted volcano.

AVER-PENNY, q. d. AVERAGE PENNY, money contributed towards the king's averages; or money given to be freed thereof. See AVERAGE.

AVERHOA, in botany, a genus of the decandria order, belonging to the pentagynia class of plants; ranking in the natural method under the fourth order, gruinales. The calyx has five leaves, the petals are five, opening at top; and the apple or fruit is pentagonous, and divided into five cells. There are three species, viz. 1. A. acida; 2. A. blimbi; and 3. A. carambola, called in Bengal the camrue or camrunga. This plant is remarkable for possessing a power somewhat similar to those species of mimosa which are termed sensitive plants; its leaves on being touched moving very perceptibly. In the mimosa the moving faculty extends to the branches; but from the hardness of the wood this cannot be expected in the carambola. The leaves are alternately pinnated with an odd one; and their most common position in the day-time is horizontal, or on the same plane with the branch from which they come out. On being touched they move themselves downwards, frequently in so great a degree that the two opposite almost touch one another by their under sides, and the young ones sometimes either come into contact, or even pass each other; the whole of the leaves of one pinna move by striking the branch with the nail of the finger, or other hard substance; or each leaf can be moved singly, by making an impression that shall not exceed beyond that leaf. In this way the leaves of one side of the pinna may be made to move one after another, whilst the opposite ones continue as they were; or they may be made to move alternately in any order, by touching properly the leaf intended to be put in motion. But if the impression even on a single leaf be strong, all the leaves on that pinna, and sometimes on the neighbouring ones, will be affected by it. Notwithstanding this apparent sensibility of the leaf, however, large incisions may be made in it with a pair of sharp scissars, without occasioning the smallest motion; nay, it may even be cut almost entirely off, and the remaining part still continue unmoved, when by touching the wounded leaf with the finger or point of the scissars, motion will take place as if no injury had been offered. The reason is, that although the leaf be the ostensible part which moves, the petiolus is the seat both of sense and action: for although the leaf may be cut in pieces, or squeezed with great force, provided its direction be not changed without any motion being occasioned; yet if the impression on the leaf be made in such a way as to affect the petiolus, the motion will take place. When, therefore, it is wanted to confine the motion of a single leaf, either touch it so as only to affect its own petiolus, or without meddling with the leaf, touch the petiolus with any small pointed body, as a pin or knife. By compressing the universal petiolus near the place where a partial one comes out, the leaf moves in a few seconds in the same manner as if the partial petiolus had been touched. Whether the impression be made by puncture, percussion, or compression, the motion does not instantly follow; generally several seconds intervene, and then it is not with a jerk, but regular and gradual. Afterwards when the leaves return to their former situation, which is commonly in a quarter of an hour or less, it is in so slow a manner as to be almost imperceptible. On sticking a pin into the universal petiolus, at its origin, the leaf next it, which is always on the opposite side, next the second leaf on the outer, and so on. But this regular progression seldom continues throughout; for the leaves on the outer side of the pinna seem to be affected both more quickly, and with more energy, than those of the inner; so that the fourth leaf on the outer side frequently moves as soon as the third on the inner, and sometimes a leaf, especially on the inner side, does not move at all, whilst those above and below it are affected in their proper time. Sometimes the leaves at the extremity of the petiolus move sooner than several others, which were nearer the place where the pin was put in. On making a compression with a pair of pincers on the universal petiolus, between any two pair of leaves, those above the compressed part, or nearer the extremity of the petiolus, move sooner than those under it, or nearer the origin; and frequently the motion will extend upwards to the extreme leaf, whilst below it perhaps does not go farther than the nearest pair. If the leaves happen to be blown by the wind against one another, or against the branches, they are frequently put in motion; but when a branch is moved gently, either by the hand or the wind, without striking against any thing, no motion of the leaves take place. When left to themselves in the day-time, shaded from the sun, wind, rain, or any disturbing cause, the appearance of the leaves is different from that of other

ants. In the latter a great uniformity
the respective position of the leaves
a; but in the carambola, some will
the horizontal plane, some raised
d others fallen under it; and in an
without any order or regularity which
erved, all of them will have changed
tive positions. Cutting the bark of
down to the wood, and even sepa-
bout the space of half an inch all
as to stop all communication by the
the bark, does not for the first day
aves, either in their position or their
r motion. In a branch, which was
in such a manner as to leave it sus-
y by a little of the bark no thicker
ad, the leaves next day did not rise so
e others; but they were green and
on being touched, moved, but in a
degree than formerly. After sun-set
go to sleep, first moving down so as to
another by their under sides; they
erform more extensive motion at night
es than they can be made to do in
e by external impressions. With a
s the rays of the sun may be collected
o as to burn a hole in it, without oc-
ny motion. But upon trying the ex-
n the petiolus, the motion is as quick
strong percussion, although the rays
much concentrated as to cause pain
ied in the same degree on the back of
The leaves move very fast from the
hock, even although very gentle.

HOISTS. See AVERROISTS.

OES, one of the most subtle of the
ilosophers, flourished about the end
venth and beginning of the twelfth
He was the son of the high-priest
judge of Cordova in Spain; and edu-
he university of Morocco, in which he
ards a professor; and studied natural
, medicine, mathematics, law, and di-
fter the death of his father he enjoyed
and was farther promoted by Alman-
or of Morocco, to be judge of Mo-
Mauritania, with leave to appoint de-
d remain at Cordova. But notwith-
s great emoluments, his liberality to
ters in necessity, whether they were
or his enemies, made him always in
was afterwards stripped of all his
thrown into prison for heresy; but
who succeeded him, being convicted
on, he was restored to his former em-
He died at Morocco in 1206. Aver-
cessively corpulent, though he eat but
. He spent his nights in the study of
; and when fatigued, amused himself
y or history. But was never seen to
game, or to partake in any diversion.
tremely fond of Aristotle's works, and
mentaries on them, whence he was
commentator, by way of eminence.
e wrote Colliget, i. e. Universal; or,
Art of Physic; and many amorous
t these he burnt when he grew old.
poems are lost. As to religion, his
were, that Christianity is absurd; Judaism, the religion of children: and Mahommedanism, the religion of swine.

AVERROISTS, a sect of peripatetic philosophers, who appeared in Italy some time before the restoration of learning, and attacked the immortality of the soul. They took their denomination from Averroes, the celebrated interpreter of Aristotle, above mentioned. Although they held the soul to be mortal, according to reason or philosophy, yet they submitted to the Christian theology, which declares it immortal. But their distinction was held suspicious; and this divorce of faith from reason was condemned by the last council of Lateran, under Leo X.

AVERRUN'CATE, } Lat. *averrunco*, I turn
AVERRUNCA'TION. } or take away whatever hurts. To weed, to avert an evil, to cut off what is superfluous.

> I wish myself a pseudo-prophet,
> But sure some mischief will come of it,
> Unless by providential wit,
> Or force, we *averruncate* it. *Butler's Hudibras.*

AVERRUNCI DEI; from averrunco, to avert; gods, whose business it was, according to the Pagan theology, to avert misfortunes. Apollo and Hercules were of the number, among the Greeks; Castor and Pollux among the Romans, and Isis among the Egyptians.

AVERSA, a town of Naples, in the Terra di Lavoro, anciently called Atella. It is situated in a fine plain, covered with vineyards and orange trees, and is the seat of a bishop (who holds immediately of the pope), of a royal governor and a judge. There are here sixteen cloisters of different orders, exclusive of nine parish churches. Population 13,800. Eight miles north of Naples. Long. 14° 1′ E., lat. 41° N.

AVERSION, according to lord Kames, is opposed to affection, and not to desire, as it commonly is. We have an affection to one person; we have an aversion to another; the former disposes us to do good to its object, the latter to do ill.

AVERSIONE LOCARE, AVERSIONE VENIRE, in the civil law, the selling, or letting things in the lump, without fixing particular prices for each piece.

AVERT',
AVER'TER,
AVER'SE,
AVERSE'LY,
AVERSE'NESS,
AVERSA'TION,
AVER'SION,
AVER'SIVE.

A, and *verto*, *versum*, to turn away or from. Averse expresses the state of having the mind turned from a thing. It signifies also unwilling, loath, reluctant.

> It is most true, that a natural and secret hatred, and *aversation* towards society in any man, hath somewhat of the savage beast; but it is most untrue, that it should have any character at all of the Divine Nature, except it proceed not out of a pleasure in solitude, but out of a love and desire to sequester a man's self for a higher conversation.
> *Lord Bacon's Essays.*

> When people began to espy the falsehood of oracles, whereupon all gentility was built; their hearts were utterly *averted* from it. *Hooker.*

> Even cut themselves off from the opportunities of proselyting others, by *averting* them from their company. *Government of the Tongue.*

There is such a general *aversation* (in human nature) to contempt, that there is scarce any thing more exasperating: I will not deny, but the excess of the *aversation* may be levelled against pride. *Id.*

> I beseech you,
> T' *avert* your liking a more worthy way,
> Than on a wretch. *Shakspeare. King Lear.*

> At this, for the last time, she lifts her hand;
> *Averts* her eyes, and half unwilling drops the brand.
> *Dryden.*

Averters and purgers must go together, as tending all to the same purpose, to divert this rebellious humour and turn it another way.
Burton's Anatomy of Melancholy.

> Has thy uncertain bosom ever strove,
> With the first tumults of a real love?
> Hast thou now dreaded, and now bless'd his sway,
> By turns *averse* and joyful to obey? *Prior.*

> *Averse* alike, to flatter or offend;
> Not free from faults, nor yet too vain to mend.
> *Pope.*

The corruption of man is in nothing more manifest, than in his *averseness* to entertain any friendship or familiarity with God. *Atterbury.*

Hatred is the passion of defiance; and there is a kind of *aversation* and hostility included in its essence. *South.*

The jealous man's disease is of so malignant a nature that it converts all it takes into its own nourishment. A cool behaviour is interpreted as an instance of *aversion*: a fond one raises his suspicions.
Addison.

AVERTI, in horsemanship, is applied to a regular step or motion enjoined in the lessons. In this sense they say pas averté.

AVERY, a place where oats, or provender, are kept for the king's horses.

AVES, birds, the name of Linnæus's second class of animals. See Ornithology and Zoology.

Aves, or the Isle of Birds, 1. One of the Carribee islands, 451 miles south of Porto Rico, with a good harbour for careening ships. It is so called from the great number of birds that frequent it; 2. another lying northward of this. Lat. 15° 0′ N.; and a third near the eastern coast of Newfoundland. Lat. 50° 5′ N.

AVESBURY (Robert), an English historian, of whom little more is known, than that he was keeper of the registry of the court of Canterbury, in the reign of Edward III. and consequently that he lived in the fourteenth century. He wrote Memorabilia gesta magnifici regis Angliæ domini, Edwardi tratii post conquestum, procerumque; tactis primitus quibusdam gestis de tempore patris sui domini Edwardi secundi, quæ in regnis Angliæ, Scotiæ, et Franciæ, ac in Aquitannia et Britannia, non humana sed Dei potentia, contigerunt, per Robertum Avesbury. This history ends with the battle of Poictiers, about A. D. 1356. It continued in MS. till 1720, when it was printed by the industrious Thomas Hearne at Oxford, from a MS. belonging to Sir Thomas Seabright. It is now very scarce.

AVESE, or Avase, a river of the United States of America, in the north-western territory, which runs into the Mississippi, in a south-west direction, about sixty miles above the Ohio. It is navigable in boats for upwards of sixty miles.

AVESNES, or Avennes, an irregular, but well fortified town on the Hepres, in Hainault,
on the frontier of France, towards the
lands, and three leagues distant from Ma
It is the head of an arrondissement, in
partment of the north; population abou
In the neighbourhood there are excellen
ries, and several iron foundries and s
houses. This was one of the frontier to
tained for a definite period by the allies, i
ment of the treaty of Paris in 1815. Lon
lat. 50° 7′ N.

AVEYRON, or Aveiron, a depart
France, having its name from the river
running from east to west, separates it i
parts. Its boundaries are to the north,
partment of the Cantal; north-east, the
east, the Gard; south-east, Herault; sout
Tarn, and west, Lot. It corresponds to
cient province of Rouergue, and is divid
five arrondissements; viz. those of Rodez
is the capital of the department), Ville F
Millhau, St. Afrique, and Espalion. It
474 square leagues, equal to about 3740
miles, and had at the last enumeration
inhabitants. They paid in direct taxes i
£140,000 sterling. It constitutes, with
partment of Lot, the spiritual jurisdic
the bishop of Cahors. This department
tered by the Aveyron, the Lot, the Tarn,
Viaur, and is covered with high and
mountains. Hence it abounds in game,
wood, and is more adapted for grazing
the cultivation of grain. Corn and wi
ever, are raised in tolerable quantity.
neral productions are copper, iron, le
phur, alum, coal, and vitriol. There i
considerable trade in cattle, wool, woolle
and in excellent cheese. The climate is
fine, though occasionally severe in winte

AVEZZANO, a town of Naples in
It is built on an almost imperceptible d
one mile from the lake of Celano, to w
avenue of poplars leads from the h
castle. This edifice stands at a little
from the town, is square, and flanked with
it was erected by Virginio Orsini, t
family this and many other great lords
longed, before they were wrested from
times of civil war, and transferred to th
nas. Avezzano was founded in 860, and
2800 inhabitants, and two religious con
within its walls, which are indeed in
condition. The houses are in general m
there are some large buildings and op
milies of the class of gentlemen, not po
fees held in capite.

AUF′. Sometimes written oaf and
definition, see Elf.

> These when a child haps to be got,
> Which after proves an idiot,
> When folk perceive it thriveth not;
> The fault therein to smother,
> Some silly doating brainless calf,
> That understands things by the half,
> Says, that the fairy left this *aulf*,
> And took away the other.

AUGA, Auge, or Agea, in fabulou
the daughter of Aleus, king of Tegea,
she was ravished by Hercules, and bro
a son, whom she left in the woods to c

m her father; but the child was pre-
id was named Telephus. When Aleus
rmed of his daughter's shame, he de-
er to Nauplius to be put to death; but
executing the father's cruel purpose,
gave Auga to Teuthras, king of Mysia,
ing no children of his own, adopted her
ghter. The dominions of Teuthras be-
after invaded by an enemy, he promised
and daughter to the man who could de-
from the threatening danger; and Tele-
ng been directed by the oracle to go to
of Teuthras, if he desired to find his
nade an offer of his services, which was
Having obtained a victory, he was
nite himself to Auga, when she rushed
with secret horror, and the gods sent a
separate them. Auga implored the
of Hercules, by whom her son was
wn to her, and she returned with him
According to Pausanias, Auga was
in a coffer with her infant son, and
to the sea, where they were preserved
cted by Minerva, till found by king

AN Codex, Codex Augiensis, a Greek
MS. of St. Paul's Epistles; supposed
elis to have been written in the ninth
nd so called from Augia major, the
monastery at Rheinau, to which it be-
It came, in 1718, into the hands of the
Dr. Bentley, who purchased it for 250
ins; it is now in the library of Trinity
ambridge. This MS. (noted F. in the
rt of Wetstein's New Testament), is
uncial letters, and without accents,
a serie, as is common with the more
pies, but with intervals between the
a dot at the end of each. The Greek
apitals, and the Latin in Anglo-Saxon
hence it is tolerably clear that it must
written in the west of Europe, where
tion of the Latin letter was in general
n the seventh and twelfth centuries.
defective from the beginning to Ro-
8; and the epistle to the Hebrews is
in the Latin version.

AS, in fabulous history, king of Elis,
his stable, which contained 3000 oxen,
t been cleaned for thirty years. Her-
desired to clear away the filth in one
Augeas promised, if he performed it,
n a tenth part of the cattle. This task
is said to have executed, by turning
of the river Alpheus, or, as some say,
, through the stable, which immedi-
ed away the dung and filth. Augeas
fused to stand by his engagement, pre-
at Hercules had used artifice, and ex-
no labor or trouble, but banished his
hyleus from his kingdom, for support-
ims of the hero. Upon this a war
d, and Hercules conquered Elis, put
death, and gave his kingdom to Phy-
geas has been called the son of Sol, be-
signifies the sun. After his death, the
ually paid to heroes, were paid to

R. Teutonick *Auegher*; Ang.-Sax.
I.

Aeg. From the same root we have edge. a tool used in the mechanic arts.

Auger (Athanasius), a learned classic, and professor of rhetoric at Rouen, and vicar-general of Lescar, published a splendid edition of the works of Isocrates, from the press of Didot, Paris, 3 vols. 4to. 1782; and the works of Lysias in 1783, in 2 vols. 4to. afterwards reprinted together in 5 vols. 8vo. He died at Paris in 1792.

AUGEREAU, (Pierre François Charles), duke of Castiglione, marshal of France; son of a fruit merchant; born at Paris, 1757; served as a carabinier in the French army; went from thence into the Neapolitan service, established himself at Naples, in 1787, as a fencing-master, and was banished thence, in 1792, with the rest of his countrymen. He served, afterwards, as a volunteer in the army of Italy, in which his talents and courage soon gained him promotion. He distinguished himself, in 1794, as general of brigade in the army of the Pyrenees, and, in 1796, as general of division in the army of Italy. He took the pass of Millesimo; made himself master, April 16, of the intrenched camp of the Piedmontese at Ceva, afterwards of that at Casale; threw himself on the bridge of Lodi, and carried it with the enemy's intrenchments. June 16, he passed the Po, and made prisoners the papal troops, together with the cardinal legate and the general's staff. Aug. 1, he came to the assistance of Masséna; maintained, during a whole day, a most obstinate struggle against a superior number of troops, and took the village of Castiglione, from which he derived his ducal title. Aug. 25, he passed over the Adige, and drove back the enemy as far as Roveredo. In the battle of Arcole, when the French columns wavered, Augereau seized a standard, rushed upon the enemy, and gained the victory. The directory bestowed this standard on him Jan. 27, 1797. Aug. 9, he was named commander of the 17th military division (division of Paris), in place of general Hatry. He was the instrument of the violent proceedings of the 18th of Fructidor, and was saluted, by the decimated legislative body, as the saviour of his country. In 1799, he was chosen member of the council of five hundred, and, therefore, resigned his command. He then obtained from the consul, Buonaparte, the command of the army in Holland. He led the French and Batavian army on the Lower Rhine to the support of Moreau, passed the river at Frankfort, and fought with the imperial general, with various success, until the battle of Hohenlinden ended the campaign. In October of 1801, being superseded by general Victor, he remained without employment till 1803, when he was appointed to lead the army, collected at Bayonne, against Portugal. When this enterprise failed, he went back to Paris, and, May 19, 1804, was named marshal of the empire, and grand officer of the legion of honor. In July of this year, the king of Spain sent him the order of Charles III. At the end of 1805, he was at the head of a corps of the great army in Germany, formed of troops collected under his command at Brest. He contributed to the successes which gave birth to the peace of Presburg, and, in March, 1806, had possession of Wetzlar and the country around, until, in the autumn of this year, a new war called him to Prussia. The wounds which he received in the battle of Eylau compelled him to return to France. Early in 1811, Napoleon gave him the command of a corps in the army of Spain. Afterwards he returned from thence, and remained without any employment until July, 1813, when he led the army in Bavaria against Saxony, where he took part in the battle of Leipsic. At the entrance of the allies into France, his duty was to cover Lyons. Louis XVIII named him a peer. After the fall of Napoleon, Augereau used reproachful language respecting him in a proclamation to his army. Napoleon, therefore, on his landing in 1815, declared him a traitor. Augereau, however, expressed himself in his favour, but took no active part in the new order of things. After the return of the king, he took his place again in the chamber of peers, sat among Ney's judges, was for a while unoccupied, and died, June 11, 1816, at his estate La Houssaye, of the dropsy.

AUGES, in astronomy, two points in a planet's orbit, otherwise called apsides, the one denominated the apogee, the other perigee. See APSIS.

AUGETTE, in fortification, the wooden pipe which contains the powder by which a mine is fired.

AUGHT. Ang.-Sax. hwit, a whit or owhit. See WAIT.

AUGILA, a district and town of Africa, between Siwah and Fezzan. It is included under the dominion of Tripoli, though the subjection is but nominal. This city is of great antiquity, being known in the time of Herodotus. It is about a mile in circumference, but dirty and ill-built; the apartments are dark, there being no aperture for light, except the door. The buildings are also very mean. Dates of excellent quality are produced abundantly. The inhabitants are employed partly in agriculture, but still more in following the caravans which pass through this territory. Long. 22° 25′ E., lat. 29° 35′ N.

AUGITES, among ancient naturalists, a kind of gem, of a pale green color, inferior in value to the topaz. This mineral is crystallised in small six or eight-sided prisms, with dihedral summits. Its colors are green, brown, and black. Internal lustre shining. Uneven fracture. Translucent. Easily broken. It scratches glass. Specific gravity 3·3. Melts into a black enamel. Its composition, according to Klaproth, is forty-eight silica, twenty-four lime, twelve oxide of iron, 8·75 magnesia, five alumina, and one manganese.

AUGMENT, *v.* & *n.*
AUGMENTA'TION,
AUGMEN'TATIVE,
AUGMEN'TER.

Lat. *augmentum*, from *augere*, to increase. To put a smaller quantity to a greater, to enlarge, to make greater, and so to strengthen.

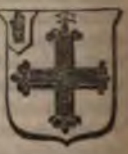
AUGMENTED, a musical term, used in contradistinction to perfect, major, minor, and diminished: thus, an augmented note forms an interval of three chromatic degrees; as C, d-sharp; E, flat, f-sharp; F, g-sharp. See INTERVALS. Augmented intervals become, by inversion, diminished.

AUGMENTATION OF LIVINGS. The shamefully poor livings of many of the inferior clergy of the church of England, attracted the attention of the legislature so long ago as the reign of queen Anne. The governors of the bounty of queen Anne, for the augmentation of the maintenance of the poor clergy, by virtue of several acts of parliament made for that purpose, are empowered to augment all livings not exceeding £50 per annum; and the number of livings following were certified to be capable of augmentation:

No. of livings.	Rate per annum.	May be augmented.	No. of au- mentation
1071	Under £10	6 times	642[illegible]
1467	From £10 to 20	4 ——	586[illegible]
1126	—— 20 to 30	3 ——	337[illegible]
1049	—— 30 to 40	twice	20[illegible]8
884	—— 40 to 50	once	884
5597	Total of augmentations to be made by the bounty before these 5597 livings will exceed £50 a-year.		18,654

Mr. Chalmers observes, that computing the clear amount of the bounty to make fifty-five augmentations yearly, it will be 339 years, from 1714 (which was the first year in which any livings were augmented), before all the small livings above certified can exceed £50 per annum; and even if one-half of such augmentations should be made, in conjunction with other benefactors (which is not probable) it will still require 226 years before all the above livings will exceed £50 per annum! This is the more disgraceful, considering the immense incomes enjoyed by the superior clergy.

AUGMENTATION, in heraldry, a particular mark of honor, borne either on an escutcheon, or a canton, as argent, a hand, gules, borne by every baronet not being of higher dignity, as in the annexed example.



AUGSBURG, the second place in the kingdom of Bavaria, both in population and celebrity, was formerly one of the free and imperial cities of Germany. It is situated at the confluence of the Wertach and the Lech. Though less flourishing than in former times, it contains a population of about 30,000 individuals, and is well fortified, in the ancient style, having four principal gates and six smaller ones. Augsburg partakes largely in the manufactures and commerce of the country, and has long been distinguished for its engravings, and its considerable bookselling trade, especially in Catholic literature. By means of its agents and bankers, Augsburg is the general medium of exchange with other countries, as well as a central depôt for the Neckar, Tyrolese, Greek and Italian wines. This city is venerable from its antiquity, and interesting from its connexion, both with the civil and ecclesiastical history of Germany. In the diet of the empire, Augsburg was originally called Vindelicia, as being the capital of the Vindelicia. When it subsequently fell under the dominion of the Romans, and a colony was settled there by Drusus, it was called Augusta-Vindelicorum and Rhætorum. It is mentioned

s (Germ. xli.) as a very splendid city
vince of Rhætia. From the Romans
o the Alemanni, and subsequently to
and the Franks. Under these its im
declined. It was subsequently in a
condition, but revived after Rodolph
d emperor; several of its former pri-
ing confirmed by him, and new ones
Augsburg is forty miles north-west of
Long. 10° 53′ E., lat. 48° 17′ N. from
h.

RG, a secularised bishopric of Ger-
w forming part of the kingdom of Ba-
took its name from the imperial city
urg, and was founded so early as the
tury. The territory of which it was
contained 1012 square miles, and lay
ng the banks of the Lech, in the direc-
e Tyrol, in the margraviate of Beocgau,
y beyond the Danube, in the principal-
burg. The population was computed
, and the total revenue at 500,000 dol-
e only towns of note are Dillingen and
ith eleven market towns and a number
s, mostly situated in the northern part
hopric, which is by far the most fruit-
opulous. The chapter was composed
rebendaries, each of whom had a salary
1000 to 1700 florins. The bishopric
the possession of Bavaria in 1802.

RG, or AUGUSTAN CONFESSION, a
confession of faith drawn up by Lu-
Melancthon, on behalf of themselves
r ancient reformers, and presented, in
the emperor Charles V. at the diet of
or Augsburg, in the name of the evan-
ly. This confession contains twenty-
pters; of which the greatest part is
in representing, with perspicuity and
religious opinions of the Protestants,
est in pointing out the errors and abuses
sioned their separation from the church
A civil war followed, that lasted up-
twenty years, but which only spread the
ions, as they were then called, instead
ting them.

UR, v. & n.
RATE,
RA'TION,
RER,
RIAL,
ROUS,
RY.

Augurium quasi avigerium, to see; quo modo *aves* se *gererent* in volando, what direction birds take in flying, Vossius. Auguries were also taken from their singing and

Hence it signifies to notice the move-
birds, and thereby to predict, to foretel
vents. We now apply the words gene-
predictions of the future by means of
s or tokens.

> Thy face and thy behaviour,
> ich, if my *augury* deceive me not,
> ness good breeding. *Shakspeare.*
>
> s, the sacred seer, who had in view
> resent and the past, and things to come,
> knew:
> ne of *augurs.* *Dryden's Fables.*

R, in Roman antiquity, an officer ap-
to foretel future events, by the chattering,
d feeding of birds. There was a college
munity of them, consisting originally of three members with respect to the three Luceres, Rhamnenses, and Tatienses; afterwards the number was increased to nine, of whom four were patricians and five plebeians. They bore an augural staff, as the ensign of their authority; and their dignity was so much respected, that they were never deposed, nor any substituted in their place, though they should have been convicted of the most enormous crimes.

AUGURALE, a place in a camp where the general took auspicia. This answered to the Auguratorium in the city. Augurale is also used in Seneca for the ensign or badge of an augur, as the lituus.

AUGURATORIUM, or AUGURACULUM, a building on the Palatine mount, where public auguries were taken.

AUGURELLO (John Aurelio), an Italian poet, born at Rimini, in 1441. He was professor of the belles letters at Treviso, at which place he died in 1524. He wrote several pieces, but his chief work was a Latin poem, entitled Chrysopœia, or the art of making gold. He dedicated his poem to Leo X. upon which the pontiff presented him with a large empty purse, and said, 'that as he could make gold he best knew how to fill it.'

AUGURY, is more fully defined the art of foretelling future events, by observations taken from the chattering, singing, feeding, and flight, of birds. It is also used in a more general signification, as comprising all the different kinds of divination. To make his observations, the augur commonly seated himself on a high tower, with his face towards the east, the north on his left hand, and the south on his right. He divided the face of the heavens into four parts, with a crooked staff, after which he sacrificed to the gods, while he covered his head with his vestment. The augurs drew omens from five different things: 1. The phenomena of the heavens, as thunder, lightning, comets, &c. 2. The chirping of birds, as already mentioned: 3. The eagerness or indifference of the sacred chickens in eating the bread which was thrown to them, they interpreted lucky or unlucky: 4. Quadrupeds crossing or appearing in some unfrequented place: 5. From different casualties, which were called dia, such as spilling salt on a table, or wine upon clothes, hearing strange noises, stumbling or sneezing, meeting a wolf, hare, fox, or pregnant bitch. The sight of birds on the left hand was always considered as a lucky object, and the words sinister lævus, though commonly imagined to be terms of ill luck, were uniformly used by the augurs in an auspicious sense.

Augury was a very ancient superstition. We know from Hesiod, that husbandry was in part regulated by the coming or going of birds; and most probably it had been in use long before his time, as astronomy was then in its infancy. In process of time, these animals seemed to have gained a greater and very wonderful authority, till at last no affair of consequence, either of private or public concern, was undertaken without consulting them. They were looked upon as the interpreters of the gods; and those who were qualified to understand their oracles were held among the chief men in the Greek and Roman

States, and became the assessors of kings, and even of Jupiter himself. However absurd such an institution as a college of augurs may appear in our eyes, yet, like all other extravagant institutions, it had in part its origin from nature. When men considered the wonderful migration of birds, how they disappeared at once, and appeared again at stated times, and could give no guess where they went, it was not unnatural to suppose, that they retired somewhere out of the sphere of this earth, and perhaps approached the ethereal regions, where they might converse with the gods, and thence be enabled to predict events; at least it was not unnatural for a superstitious people to believe this as soon as some impostor was impudent enough to assert it. Add to this, that the disposition in some birds to imitate the human voice, must contribute much to the confirmation of such a doctrine. This institution of augury seems to have been much more ancient than that of aruspicy; for we find many instances of the former in Homer, but not a single one of the latter, though frequent mention is made of sacrifices in that author. Thus it is probable that natural augury gave rise to religious augury, and this to aruspicy, as the mind of man makes a a very easy transition from a little truth to a great deal of error. A passage in Aristophanes gave the hint for these observations. In the comedy of the birds, he makes one of them say, 'The greatest blessings which can happen to you, mortals, are derived from us; first, we show you the seasons, viz. spring, winter, autumn. The crane points out the time for sowing, when she flies with her warning notes into Egypt; she bids the sailor hang up his rudder and take his rest, and every prudent man provide himself with winter garments. Next the kite appearing, proclaims another season, viz. when it is time to shear his sheep. After that the swallow informs you when it is time to put on your summer clothes. We are to you (adds the chorus) Ammon, Dodona, Apollo: for, after consulting us, you undertake every thing; merchandise, purchases, marriages, &c.' Now, it seems not improbable, that the same transition was made in the speculations of men, which appears in the poet's words; and that they were easily induced to think, that the surprising foresight of birds, as to the time of migration, indicated something of a divine nature in them.

AUGUST. Lat *Augustus*. Said to be so called from the thing signified being consecrated by augury, and on that account was sacred and venerable.

August, Augustus, Lat. The name of the eighth month from January, inclusive. August was dedicated to the honor of Augustus Cæsar, because in the same month he was created consul; thrice triumphed in Rome; subdued Egypt to the Roman empire; and made an end of civil wars; being before called Sextilis, or the sixth from March. August was, by our Saxon ancestors (who, like the modern French, gave their months significant names), called weod-monath, i. e. weed-month, on account of the great plenty of weeds at that season. It answers to part of the two last months in the year in the new French calendar; comprehending the seventeen last days
of Thermidor, and the fourteen
Fructidor.

AUGUSTA, a considerable an
town of Georgia, and the present se
ment. It is pleasantly situated i
county, on the south-west side
river, upon a beautiful plain, five mil
and one and a half in breadth. It
laid out, the streets intersecting o
right angles, and contains about 2
The public buildings are, a church;
a government-house, where the gov
tary of state, and other public offi
their business; a market-house; a
jail; a spacious building, where t
justice are administered, and the leg
their sessions; and three ware-h
enough to contain 10,000 hogshead
The academy is governed by a board
who are a body corporate in law.
this institution amount to several thou
sterling. Opposite the centre of
large wooden bridge has been erecte
Savannah, which opens a commodio
communication with South Carolin
feet wide, and between 700 and 8
It is about 236 miles from the m
vannah river, including its mea
N. N. W. of Savannah, and 746
Philadelphia. Population upwar
Lat. 33° 19′ N., long. 80° 46′ W.

Augusta, a post town of Maine,
Kennebec, 56 miles N. N. E. of P
N. E. of Boston. Population, in 18
1820, 2457. It is a pleasant and
town, and has, by an act of the stat
been constituted the seat of the state
after January 1, 1832. Here is
bridge across the Kennebec, consis
arches, each 180 feet long. The
gable to Augusta for vessels of 100

Augusta, a county of Virginia,
east and partly west of the North M
of the Alleghany. It is fertile, and
wards of 12,000 inhabitants, includi
has a remarkable cascade, called Fa

Augusta, in antiquity, a title
Roman empresses, and frequently to
and daughters of the emperors, w
empresses.

Augusta, in ancient geography,
various ancient cities, mostly name
gustus or his successors: such as,

1. **Augusta**, a city and island in
sea, called also Austa, on the coast
near Ragusa, subject to Venice. Lon
lat. 42° 35′ N.

2. **Augusta Acilia**, a town in
called Azelburg.

3. **Augusta Ausciorum**, a tow
nia, originally called Climberum,
it afterwards resumed. In the mid
ever, it took the name of the people
is now called Auch.

4. **Augusta Braccarum**, a city
now called Braga.

5. **Augusta Drusi**, a town in
called Memmingen.

6. **Augusta Emerita**, a town

s, capital of the province; a colony
eriti, now called Merida, in Spanish
ra.

Augusta Prætoria; 1. a town and
allia Cisalpina, the capital of the Sa-
d at the foot of the Alps Graiæ, on the
w called Austa. 2. another in Tran-
now called Cronstadt.

sta Rauracorum, a town of Gallia
miles east from Basil; now called
From the ruins, which are still to be
ppears to have been a considerable

usta Romanduorum, the ancient
uxemburg.

usta Suessonum, a town of Gallia
the Axona; with great probability
o be the Noviodunum Suessonum of
w called Soissons.

usta Taurinorum, a town of the
the foot of the Alps, where the Duria
into the Po; now called Turin.

usta Tiberii, a city of Bavaria; now
isbon.

usta Treba, a town of the Æqui,
rings of the river Anio in Italy; now
i, in Umbria.

usta Trevirorum, a town of the
ow called Trieres or Treves.

usta Tricassium, the ancient name
.

usta Trinobantum, the name given
nans to London.

usta Veromanduorum, a town of
ul; now St. Quintin.

Vindelicorum, a town of the Li-
e Licus; styled by Tacitus a noble
Rhætia; now called Augsburg, in
ee Augsburg.

Historia, in literature, the history
an emperors, from Adrian to Carinus;
m A. D. 157 to 285, composed by six
ers, viz. Ælius Spartianus, Julius Ca-
Ælius Lampridius, Vulcatius Gallica-
llius Pollio, and Flavius Vopiscus.

STALIS Præfectus, a title peculiar
nan magistrate who governed Egypt.
wer much like that of a proconsul in
inces.

STAN, relating to Augustus, or Au-

an Confession. See Augsburg.

STICUM, in writers of the middle
gess of an emperor to the people or

STEUM Marmor, in the natural his-
ancients, a name given to the common
white marble, so frequent in use with
les, &c. and called by our artificers
marble.

STIA, an ancient town in Wallachia,
d Kusty.

STIN (St.), the capital town of the
of East Florida, North America, is si-
the Atlantic, on a peninsula, consisting
w strip of land. It is of an oblong
ersected by four streets, which cut each
ght angles. It is reckoned a healthy
d is well supplied with fresh water. It has a good port, although the breakers, at its entrance, have formed two channels, whose bars have only eight feet of water each. It has a strong castle for its defence; a good parish church, and two hospitals, one for the garrison of troops and another for the community. It was burned by Sir Francis Drake, in 1586, and by captain Davis, with the Buccaniers, in 1685; but was immediately after rebuilt. In 1702 it was besieged by the English, who, not being able to take the castle, burned and destroyed the town. In 1714 it was again unsuccessfully attacked by the English under general Oglethorpe. Long. 81° 40′ W., lat. 29° 58′ N.

AUGUSTINE, a cape of South America, in Brasil, on the Atlantic, 300 miles north-east of All-Saints' Bay. Long. 35° 4′ W., lat. 8° 30′ S.

Augustine, or Austin (St.), the first archbishop of Canterbury, was originally a monk in the convent of St. Andrew at Rome, and educated under St. Gregory, afterwards Pope Gregory I. by whom he was despatched into Britain, with forty other monks, about A. D. 596, to convert the English to Christianity. He landed in the isle of Thanet, and having sent some French interpreters to king Ethelbert, with an account of the errand on which he came, the king gave him leave to convert as many of his subjects as he could, and assigned his place of residence at Doroverum, since called Canterbury; here the king himself was converted; whose example had a powerful influence in promoting that of his subjects. Austin now despatched a priest and a monk to Rome, to acquaint the pope with the success of his mission, and to desire his resolution of certain questions. These men brought back with them a pall and several books, vestments, utensils, and ornaments for the churches; with directions to Augustine concerning the settling of episcopal sees in Britain; ordering him not to pull down the idol temples, but to convert them into Christian churches; only destroying the idols, and sprinkling the place with holy water, that the natives, by frequenting the temples they had been always accustomed to, might be the less shocked at their entrance into Christianity. Augustine resided principally at Canterbury, which thus became the metropolitan church of England; and having established bishops in several of the cities, he died A. D. 607. The popish writers ascribe several miracles to him. The observation of his festival was first enjoined in a synod held under Cuthbert, archbishop of Canterbury, and afterwards by the pope's bull in the reign of Edward III.

Augustine (St.), a famous father of the church, was born at Thagaste, in Numidia, A. D. 354. His father, a burgess of that city, was called Patricius; and his mother, Monica, who being a woman of great virtue, instructed him in the principles of Christianity. In his early youth he was in the rank of the catechumens; and falling dangerously ill, earnestly desired to be baptized, but the violence of the distemper ceasing, his baptism was delayed. His father, who was not yet baptised, made him study at Thagaste, Madaura, and afterwards at Carthage. Augustine having read Cicero's books of philosophy, applied himself to the study of the scriptures; but suffered himself to be seduced by the Manicheans. At the age of nineteen he returned to Thagaste, taught grammar, and frequented the bar: he afterwards taught rhetoric at Carthage with applause. The insolence of the scholars at Carthage made him take a resolution to go to Rome, though against his mother's will. Here also he had many scholars; yet he quitted Rome, settled at Milan, and was chosen professor of rhetoric in that city. Here he had opportunities of hearing the sermons of St. Ambrose, which, together with the study of St. Paul's epistles, and the conversion of two of his friends, determined him to retract his errors, and quit the sect of the Manicheans: this was in the thirty-second year of his age. In the year 386 he retired to the house of a friend of his, named Verecundus, where he seriously applied himself to the study of the Christian religion, to prepare himself for baptism, which he received at Easter, in 387. He went to Africa about the end of 388; and having obtained a garden-plot without the walls of the city of Hippo, he associated himself with eleven other persons of eminent sanctity, who distinguished themselves by wearing leathern girdles, and lived there in a monastic way for three years, exercising themselves in fasting, prayer, study, and meditation, day and night; from hence sprung up the Augustine friars, or eremites, of St. Augustine, the first order of mendicants. About this time, or before it, Valerius, bishop of Hippo, against his will, ordained him priest: nevertheless, he continued to reside in his little monastery, with his brethren, who, renouncing all property, possessed their goods in common. Valerius, who had appointed St. Augustine to preach in his palace, allowed him to do it in his presence, contrary to the custom of the churches in Africa. He explained the creed, in a general council of Africa, held in 393. Two years after, Valerius, fearing he might be preferred to be bishop of another church, appointed him his colleague, and caused him to be ordained bishop of Hippo, by Megalus, bishop of Calame, then primate of Numidia. St. Augustine died the twenty-eighth day of August, 430, aged seventy-six, having had the misfortune to see his country invaded by the Vandals, and the city where he was bishop besieged for seven months. His works make ten volumes; the best edition of them is that of Maurin, printed at Antwerp, in 1700.

Augustine (Anthony), an eminent prelate, born at Saragossa, in Spain. He was employed by the pope on an embassy to England, in 1554; and afterwards assisted at the council of Trent. In 1574 he was preferred to the archbishopric of Tarragona. So great was his charity, that at his death, in 1586, he did not leave what was sufficient to defray his funeral expences. He wrote several treatises on law, and on medals, in the Spanish language, which were printed in 1587.

Augustine (Leonard), or **Agostini**, an Italian antiquary, was a native of Sienna, and flourished in the seventeenth century. He compiled an elaborate work on ancient gems, which was first published in 1657, in two volumes, 4to. and again in 1707, four volumes, 4to. A Latin translation of this work, by Gronovius, was published at Amsterdam in 1685, and at F
1694.

Augustine, Mount, St. a remarka
within the entrance of Cook's islet,
miles from its western shore. It wa
Capt. Cook, who was doubtful wheth
not belong to the continent. It was sin
in 1794, by Mr. Puget, who, in the
sailed round the world, in company
couver. He states it to be about nine
circuit.

Augustine, St. a port on the coa
brador, opposite St. John's Bay, Newf
About two miles south-west runs a chai
islands, called St. Augustine's Cha
long. 58° 50′ west, and lat. 51° 11′ no

Augustine's Square, St. a number
islands in the Gulf of St. Lawrence,
reaching from Shecatica bay on the
to Outer Island on the south-west.

AUGUSTINIANS, divines who ma
the authority of St. Augustine, that grac
tual from its nature, absolutely and mo
not relatively and gradually. They ar
into rigid and related.

Augustinians, or **Augustins**, an
religious; so called from St. Augustin
rule they observe. The Augustins,
friars, were originally hermits, whom p
ander IV. first congregated into one bo
their general Lanfranc, in 1256. Soon
order was brought into England, where
about thirty-two houses at the time of
pression. The Augustins are clothed
and make one of the four orders of m
From these arose others, under the den
of bare-foot Augustins, Minorites, or
nor. There are also canons regular
gustine, who are clothed in white,
their cope, which is black. At Paris
known under the denomination of re
Genevieve; that abbey being the ch
order. There are also nuns and canone
observe the rules of St. Augustine.

AUGUSTINUS, a work of Janseni
of Ypres, in three volumes, folio, print
vain in 1540; the first whereof conta
course against Pelagianism; and th
treatises on reason; the use of authorit
logical matters; the state of innocen
nature by sin; grace, &c. From thes
the five famous propositions of the
were collected.

AUGUSTOBONA, a city of the Tr
ancient Gaul, from whom it was afterwa
Tricasses, and Trecassæ; and still fa
rupted to Thracæ, or Treci; whence i
name Troyes.

AUGUSTOBRIGA, an ancient
Spain, now called Medina Celi.

AUGUSTODUNUM, the capital of
where there was a famous academy fo
cation of youth; now called Autun.

AUGUSTOMAGUS, an ancient to
lia Belgica, now called Senlis, in t
France. Long. 2° 40′ E, lat. 49° 12′

AUGUSTONIMETUM, a town
Gaul, now Nevers.

AUGUSTORITUM, according to

capital of the Pictones, afterwards called now Poictiers. But by Antonine's from Burdigala to Argantomagus (or i, as it is interpreted by many), it can be but the capital of the Lemovices, now t, situated between Vesunna or Petro- Perigueux, and Argantomagus. Long. . lat. 45° 52′ N.

STALIA, in Roman antiquity, a festi- hich games (Augustales ludi) were cele- in Rome, annually, on the day of the f Augustus Cæsar, at the conclusion ars. It was instituted ann. U. C. 735, t on the IVth ides (12th) of October. s decease, the tribunes of the people rmission to celebrate the festival at their ate expense.

USTALES SODALES, priests institu- iberius after the apotheosis of Augustus o perform the service of the new god. l twenty of the noblest Romans were y lot to this office; and among the first were Tiberius himself, Drusus, Clau- l Germanicus.

USTOWO, or AUGUSTOW, a town in the nt of Lomza, Poland. It contains 2000 ts, and has a staple for salt, fifty-six th-west of Rielsk.

STULUS, otherwise called Flavius Ro- ugustus, was the son of Orestes, and the an emperor. Being subdued by Odo- king of the Heruli, he abdicated the n 475, and thus put the western empire, had subsisted 522 m the battle of Phar- his prince is repre- some medals, as in xed figure; inscrip- N. ROMULUS AU- LUS. P. F. AUG.

D.N. ROMVLVS AVGVSTVS P F AVG

USTUS, an appellation conferred upon ctavianus. See OCTAVIANUS, and ROME. cure name of Octavianus, Mr. Gibbon , he derived from a mean family in Ari- was stained with the blood of the pro- ; and he was desirous, had it been , to erase all memory of his former life. trious surname of Cæsar he had assumed lopted son of the dictator; but he had h sense either to hope to be confounded, compared with that extraordinary man. roposed in the senate, to dignify their with a new appellation; and after a rious discussion, that of Augustus was among several others, as being the most ve of the character of peace and sanctity he uniformly affected. Augustus was a personal, Cæsar a family, distinction. mer should naturally have expired with ce on whom it was bestowed; and how- latter was diffused by adoption and alliance, Nero was the last who could ny hereditary claim to the honors of an line. But at his death, the practice ntury had inseparably connected those tions with the imperial dignity, and they en preserved by a long succession of s, Romans, Greeks, Franks, and Germans, from the fall of the republic to the present time. A distinction was, however, soon introduced. The sacred title of Augustus was always reserved for the monarch; the name of Cæsar was more freely communicated to his relations; and from the reign of Adrian, at least, was appropriated to the second person in the state, who was considered as the presumptive heir of the empire.

AUGUSTUS FORT, a small fortress of Scotland, in Invernesshire, at the head of Lochness, between the rivers Taarf and Oich. The name of this fort in Erse is Killchuimin, or the burial place of the Cummins. It lies on the road to the Isle of Sky.

AU-GUY-L'AN-NEUF, or AUGUILLANNEUF. See MISLETO.

AVIA. See AQUILA.

AV'IARY. Lat. *avis*, a bird. A place where birds are kept.

> In *aviaries* of wire, to keep birds of all sorts, the Italians bestow vast expence; including great scope of ground, variety of bushes, trees of good height, running waters, and sometimes a stove annexed, to contemper the air in the winter. *Wotton's Architecture.*
>
> Look now to your *aviary*; for now the birds grow sick of their feathers. *Evelyn's Kalendar.*

AVIARY is now used for any place in which birds are kept, but more particularly where the beauty of their plumage or the sweetness of their song has been the cause of their confinement. Lænius Strabo, an opulent and luxurious Roman, was the first who introduced aviaries upon an extensive scale, and erected a splendid one at his villa near Brundusium. Varro, however, outshone all in his ornithological buildings, and elegant and spacious aviary, at his country house near Casinum. With evident satisfaction, he relates, that in his days there were two sorts of aviaries, one for containing birds intended for the table, and the other the birds which were kept for their song or plumage. The former sort were built entirely for use, but the latter were often beautiful pavilions, with an apartment or saloon in the centre, for the company to sit in and enjoy the melody of the feathered songsters. Aviaries have never, in modern times, equalled the splendor and extent of those of the Romans; yet the aviary at Woburn Abbey, the seat of the Duke of Bedford, is of great extent and value; and Malmaison, one of the palaces of the late Emperor Napoleon, contains an aviary at once large, elegant, and well stocked with birds from all quarters of the globe.

AVICENA, AVICENES, or AVICENNA, the prince of Arabian philosophers and physicians, was born at Assena, a village near Bokhara. His father was a Persian, and had married at Bokhara. The first years of Avicenna were devoted to the study of the Koran and the Belles Lettres. His progress was so rapid, that when he was but ten years old, he was perfectly acquainted with the most hidden senses of the Koran. Abu-Abdoullah at that time professed philosophy at Bokhara with great reputation. Avicenna studied logic under him; but, disgusted with the slow manner of the schools, he set about studying alone, and read all the authors that had written on philosophy, without any other help than that of the commentators. After reading the first six propositions of Euclid, he proceeded alone to the last, having made himself perfect master of them, and treasured up all of them equally in his memory. Endued with an extreme avidity for all the sciences, he did not neglect the study of medicine. Persuaded that this divine art consists as much in practice as in theory, he sought all opportunities of seeing the sick; and afterwards confessed that he had learned more from experience than from all the books he had read. He was now in his sixteenth year, and was already celebrated as the light of his age. He resolved at this age to resume his philosophical studies, which medicine had made him neglect; and he spent a year and a half without ever sleeping a whole night together. If he felt himself oppressed by sleep, or exhausted by study, a glass of wine refreshed his wasted spirits, and gave him new vigor. At the age of twenty-one he conceived the bold design of incorporating, in one work, all the objects of human knowledge; and carried it into execution in an Encyclopædia of twenty volumes, to which he gave the title of the Utility of Utilities; an immense labor for one man at such a period. Several great princes had been taken dangerously ill, and Avicena was the only one that knew their ailments and cured them. His reputation increased daily, and all the kings of Asia desired to retain him as their physician. Mahmud, the first sultan of the dynasty of the Samanides, was then the most powerful prince of the east. Imagining that an implicit obedience should be paid by all manner of persons to the injunctions of his will, he wrote a haughty letter to Mamun sultan of Kharazm, ordering him to send Avicena to him, who was at his court, with several other learned men. Philosophy, the friend of liberty and independence, looks down with scorn on the shackles of tyranny. Avicena, accustomed to the most flattering distinctions among the great, could not endure the imperious manner of Mahmud's inviting him to his court, and refused to go. But the sultan of Kharazm, who dreaded his resentment, obliged the philosopher to depart, with others, whom that prince had demanded to be sent to him. Avicena pretended to obey; but, instead of repairing to Gazna, he took the rout of Georgian. Mahmud, who had gloried in the thoughts of keeping him at his palace, was greatly irritated at his flight. He despatched portraits, done in crayons, of this philosopher to all the princes of Asia, with orders to have him conducted to Gazna, if he appeared in their courts. But Avicena had fortunately escaped the most diligent search after him. He arrived in the capital of Georgian, where, under a disguised name, he performed many admirable cures. Cabous then reigned in that country. A nephew whom he was extremely fond of, having fallen sick, the most able physicians were called, and none of them were able to know his ailment, or give him any ease. Avicena was at last consulted. So soon as he had felt the young prince's pulse, he was confident that his illness proceeded from a passion which he durst not avow. Avicena commanded the person who had the care of the different apartments of the palace to name them all in their respective order. A more lively motion in the prince's pulse, at hearing one of these apartments mentioned, betrayed a part of his secret. Avicena then ordered the keeper to name all the female slaves that inhabited that apartment. At the name of one of these beauties the young Cabous could not contain himself; an extraordinary vehemence of his pulse is said to have completed the discovery of what he in vain desired to conceal. Avicena, now fully assured that this slave was the cause of the prince's illness, declared that she alone had the power to cure him. The sultan's consent was necessary, and he of course was curious to converse with his nephew's physician; but had scarce seen him, when he knew in his features those of the portrait sent him by Mahmud: still Cabous, far from forcing Avicena to repair to Gazna, retained him for some time, and heaped honors and presents on him. The philosopher passed afterwards into the court of Nedjmeddevle, sultan of the race of the Bouides. Being appointed first physician to that prince, he found means to gain his confidence to so great a degree that he raised him to the post of grand vizier. This dignity, however, he did not long enjoy. Too great an attachment to pleasure made him lose at once his post and his master's favor. From that time Avicena felt all the rigors of adversity, which he had thus brought upon himself. He wandered about as a fugitive, and was often obliged to shift the place of his habitation to secure his life from danger. He died at Hamadan, aged fifty-eight, A.D. 1036, and in the year of the Hegira 428. No one composed with greater facility than Avicena. He is said to have written fifty pages a-day without fatigue. Until the twelfth century he was preferred for philosophy and medicine to all his predecessors. His works were the only writings in vogue, even in Europe. The following are their titles: 1. Of the Utility and Advantage of Science, 20 books. 2. Of Innocence and Criminality, 2 books. 3. Of Health and Remedies, 18 books. 4. On the means of preserving Health, 3 books. 5. Canons of Physic, 14 books. 6. On Astronomical Observations, 1 book. 7. On Mathematical Sciences. 8. Of Theorems, or Mathematical and Theological Demonstrations, 1 book. 9. On the Arabic Language, and its Proprieties, 10 books. 10. On the Last Judgment. 11. On the Origin of the Soul, and the Resurrection of Bodies. 12. Of the end we should propose to ourselves in Harangues and Philosophical Argumentations. 13. Demonstration of collateral Lines in the Sphere. 14. Abridgment of Euclid. 15. On Finity and Infinity. 16. On Physics and Metaphysics. 17. On Animals and Vegetables, &c. 18. Encyclopædia, 20 volumes.

AVICENNIA, or Avicenia, eastern anacardium, a genus of the angiospermia order, and didynamia class of plants; ranking in the natural method under the fortieth order, personatæ. The calyx is quinquepartite; the corolla is bilabiated, the upper lip squared; the capsule is leathery, romb-like, and monospermous. There are two species, viz. 1. A. nitida, the shining, eastern anacardium; and, 2. A. tomentosa the downy

The seeds are said to be the Ma-
formerly kept in the shops, the ker-
ch were eaten as almonds. Others
plant producing the Malacca bean
bontia germinans.

Loch, anciently called Loch-luina,
otland, in the parish of Dalavich, in
Mr. Campbell, in his Statistical
it is 'a beautiful sheet of water, of
riangular form, about eight miles in
e, full of trouts; having a castle and
ds, the resort of gulls, cranes, water
wild ducks. Near this lake lay the
ncient Celtic poem, called Cathluina,
ct of Luina; and in the lake is an
scene of another poem, called Laoi
the death of Fraoch. Many places,'
this neighbourhood are still denomi-
Ossian's heroes.'

river rising from the above-men-
and running through a wood, and
arish of Dalavich, to which it gives
at last falls into Lochow.

Y, } Lat. *avidus;* from *aveo*, I
SLY. } desire earnestly. Covetous-
ness, insatiable appetite.

g is more *auydyously* to be desired, than
eace of God.

Bale's Image of both Churches, part i.

would have been received with such
spect as those.

Paley's Evidences.

S, Rufus Festus, a Latin poet of the
ry. He translated the Phænomena
e description of the earth by Diony-
s Fables, &c. An edition of his
printed at Paris in 1590, and again

O Pear. See Laurus.

NO, a small town of Piedmont in
miles west of Turin.

N, a city of France, in the depart-
ucluse, on the banks of the Rhone,
from Paris. Before the revolution
t to the Pope; and the residence of
m in it had rendered it considerable.
ned many of the natives to be ene-
ew government; especially after the
had abolished the establishment of
Catholic religion in France; and was
much bloodshed. It is now, however,
nnexed to France. Near the Rhone
ge rock, within the circumference of
on which is a platform, whence may
ospect of the whole city and its en-
circumference is somewhat more
miles. Its manufactories are silks,
of vitriol, and aqua-fortis. Its pro-
brandy, almonds, olives, oil, saffron,
, and wool; and it contains a well-
atic asylum, and an hospital of in-
s which lodges 1500 in-pensioners.
French revolution its population
,000; but in the latest census they
It is the seat of a bishop, whose
tains the departments of Vaucluse
rd; and, in 1803, an university, or
s established here.

Avignon was ceded by Philip III. of France to the see of Rome in 1273. On the decease of Benedict XI. the papal court was transferred here; and the six successive pontiffs, Clement V. John XXII. Benedict XII. Clement VI. Innocent VI. and Urban V. made it their only abode. The entreaties of Petrarch were often addressed to the four last. He was well acquainted with Avignon, which had been the residence of his father; and the celebrated fountain of Vaucluse, but a short distance from its walls, has been immortalised by the complaints of his unreturned love. The tomb of Laura is still shown in the church of the Cordeliers; and her husband, Hugh de Sade, sleeps there by her side. He speaks of it as the sink of vice and corruption, as an object of universal hatred and contempt, as barbarous, and as the mystic Babylon. Yet for seventy years, from 1309, it continued to be the seat of the holy see; and after the death of Gregory XI. who returned once more to the Vatican, on the commencement of the great schism of the west, during forty years more, the two rival pontiffs of the day thundered their respective excommunications against each other from the banks of the Rhone and of the Tiber. The election of Martin V. terminated the distraction, and Rome once again became the single metropolis of the papacy. During its subjection to the papal see, Avignon was several times seized by France: once in 1662, when the French ambassador at Rome had been insulted by the Corsican guards; again in 1688; and again in 1733, on account of the loss occasioned to the French revenue by smuggling. Another instance of seizure happened in 1768, when pope Clement XIII. threatened to excommunicate the duke of Parma, and took the Jesuits under his protection; it was not given back till 1774, by which time the papal chair had changed its occupant. The Count de Grignan, the husband of Madame de Sevigné's daughter, held it as viceroy for two years, and many of Madame de Sevigné's letters are addressed to Avignon.

Avignon Berry, the fruit of a species of lyceum, which grows plentifully near Avignon and in other parts of France. The berry is somewhat less than a pea; its color is green, approaching towards a yellow; and it is of an astringent and bitter taste. It is much used by the dyers, who stain a yellow color with it; and by the painters, who also make a fine golden yellow of it.

AVILA, a city of Spain in Old Castile, seated on an eminence on the banks of the river Adaja, and in sight of the mountains of Pico. It is fortified both by nature and art, having had a wall 9075 feet in circumference, adorned with lofty towers and handsome gates. The houses are generally good and stately. It has an university, and a considerable bishopric; besides a cathedral, which has eight dignitaries and forty canons and minor canons. It stands in the middle of a large plain, surrounded with mountains and covered with fruit-trees and vineyards There is likewise a manufacture of cloth.

Avila, or Aviles, a town of Spain, in Asturias, on the Bay of Biscay, eight miles south of Cape de Pinas, and twenty-five north of Oviedo

Avila (Giles Gonzales,) a Spanish historian. He went to Rome for his education, and when he returned to his own country obtained a rich benefice, and was appointed historiographer to the king. He wrote a Treatise on the Antiquities of Salamanca, also the Theatre of the Churches of India, and other works. He died in 1658.

AVILA (Louis d'), a Spanish gentleman sent by Charles the Fifth, as ambassador to the popes Paul IV. and Pius V. and was afterwards a commander at the siege of Metz. He wrote historical memoirs of the wars of Charles V. against the Protestants of Germany, entitled 'Los Commentarios de la Guerra del Emparador Carlos V. contra los Protestantes de Alemania;' first printed in 1546, and afterwards translated into French and Latin. He also wrote Memoirs of the War in Africa.

AUJILAH, an oasis, in the great Sahrà, or Lybian desert, in lat. 29° 30′ N. and long. 22° 30′ E. through which Mr. Hornemann passed in 1798. He says, there are three towns in the territory of Aujilah, the capital of that name, Mojabrah, and Meledilah; the latter are near each other, and both about four hours distant from Aujilah. That city is about a mile in circumference; ill built, though of stone, dirty, and wretched. Mojabrah, is smaller but more populous; its inhabitants are principally engaged in commerce, as those of Meledilah are in agriculture. The women are skilful weavers, and export their cloths to Fezzàn. The soil round the town is sandy, but fertile when well watered. It is subject to Tripoli, and the Bey of Benghazi was resident there during his visit.

AVILER (Augustine Charles d'), a French architect, born in 1653. He was taken by the Algerines in his passage to Rome, and carried to Tunis, where he designed a grand mosque, which is much admired. He was liberated after two years, and settled at Montpelier, where he died, in 1700. He wrote a Course of Architecture, in 4 vols. 4to.

AVIO, a town of Germany in the bishopric of Trent, a little west of the Adige.

AVIS, a river of Portugal, in Alentejo.

Avis, or Aviz, a small town of Portugal, in Alentejo, seated on an eminence with a castle near the river.

Avis, Knights of, an order of knighthood in Portugal, established about A. D. 1162. When Evora was taken from the Moors, in the reign of Alphonso I. king of Portugal, it was garrisoned by several persons who assumed the title of knights of St. Mary of Evora, which was soon after changed for that of knights of Avis, which town the king gave them, and whither they removed from Avora. The badge of the order is a green cross flory, and they observe the rule of St. Benedict.

Avis Longa, a name given by Nieremberg to the hoitlattotl of the Americans, a bird remarkable for the swiftness of its running.

Avis Nivea, a name under which Nieremberg has described an American bird, of the size of a thrush, brown and black on the back, and yellow under the belly; it imitates the human voice, and is called by the natives, ceoan.

Avis Pennipulcra, the name of an American bird, described by Nieremberg, and called by the Indians quetzaltototl. It is of the size of a pigeon, and is of more beautiful colors than the peacock. There are, besides this species, three or four others. Mr. Ray has, however, ranged all these under the number of birds, the account of which he is either dubious about, or suspicious of the truth of.

Avis Tropicorum, the Tropic bird, a bird of the size of the common duck, found only about the tropics.

Avis Venti, the bird of the wind. See Heatototl.

AVISANDUM, in Scots law, literally advising, or under consideration. A process is said to be under avisandum, when the whole proofs, with the arguments on both sides, are under the consideration of the judge, before he has given an interlocutor or decision upon the cause.

AVIS'ION. Used for Vision.

> The kinge of this *auision*,
> Hath great imaginacion,
> What thinge it signifie maie.
>
> *Gower, Con. A.* book viii. p. [illegible]

AVISO, adviso, Italian; a term chiefly used in matters of commerce to denote an advertisement, an advice, or piece of intelligence.

AVISON (Charles), an English musician of Newcastle, where he practised the whole of his life. In 1752 he published an Essay on Musical Expression, which was favorably received, and reached a second edition in 1763, when it produced published remarks from Dr. Hayes, professor of music at Oxford. Avison quickly retorted, and his reply is appended to the third edition of the original essay. He died at Newcastle in 1770, and left five concertos for the violin, and other compositions, which are esteemed light and elegant.

AVITES, a tribe of Samaritans, who came from Avah, in Chaldea, and were settled by Sennacherib in Samaria. They worshipped the idols Nibhaz and Tartak. 2 Kings xvii. 24—31.

AVITUS, one of the emperors of Rome, in the last stage of its declension. He succeeded Maximus, A. D. 455, and reigned only one year, being cut off and succeeded by Majorian, A. D. 456.

AVI'ZE. See Advise.

> No power he had to stir, nor will to rise;
> That when the careful knight 'gan well *avise*,
> He lightly left the foe. *Faerie Queene.*
>
> As they 'gan his library to view,
> And antique registers for to *avise*. *Spenser.*
>
> With that, the husbandman 'gan him *avise*,
> That it for him was fittest exercise. *Id.*
>
> But him *avising*, he that dreadful deed
> Forbore, and rather chose, with scornful shame,
> Him to avenge. *Id.*

AUK, in ornithology, See Alca.

AUKLAND, Bishops. See Auckland.

AULA, is used for a court baron, by Spelman; by some old ecclesiastical writers, for the nave of a church, and sometimes for a court-yard.

Aula Regia, or Aula regis, a court established by William the Conqueror in his own hall, composed of the king's great officers of state, who resided in his palace, and were usually attendant

rson. This court was regulated by the
hich forms the eleventh chapter of
harta, and established in Westminster-
re it hath ever since continued in op-

WIFE'S LIFT, an ancient structure,
arish of Baldernock, Dumbartonshire,
nile from the church; supposed to be a
ancient druidism, and from its name
been the work of Druidesses. The
t stone is eighteen feet long, eleven
d six deep.
N, an ancient imperial city of Ger-
the circle of Suabia, thirty miles north

TES, αυλητες, in antiquity, a flute-
One of the Ptolemies of Egypt, bore
me of Auletes.
C, an act, in the Sorbonne and foreign
es, which a young divine maintains
ing admitted a doctor in divinity. It
an harangue of the chancellor, addres-
young doctor; after which he receives
nd presides at the aulic or disputations.
an epithet given to certain officers of
e, who compose a court which decides,
appeal, in all processes entered in it.
ic council is a jurisdiction of the Ger-
ire, established by Maximilian I. in
counterbalance the authority of the Im-
amber. It is called Aulic, because it
he emperor's court aula. The emperor
the members, consisting of a president,
dent, and an unlimited number of
s; six of whom at least must be Pro-
All points relating to feudal rights and
ed territories of the emperor in Italy
ged by this council. In order to pre-
collision with the emperor's will, it
contents itself with making a report to
the form 'fiat votum ad Cæsarem.'
the emperor's court, it is sometimes
titiam imperatoris, the emperor's jus-
aulic court ceases at the death of the

, in ancient geography, a sea-port town
, over against Chalcis of Eubœa, on
us, where that strait is narrowest; and
re some time joined by a mole or cause-
craggy situation, and a village of the
, distant from Chalcis three miles. The
famous for the rendezvous of 1000
er Agamemnon, previous to the Trojan
. It is now entirely destroyed.
S Atticus, a captain of a Roman
der Julius Agricola, who was killed in
ith Galgacus, at the foot of the Gram-
wo urns were dug up in the parish of
, containing human ashes; one of
. Moncrieff supposes to have contained
his officer, and the other those of Agri-

N, anciently a town and station for
Illyricum, on the Adriatic; now called
port town on one of the mouths of the
gulf of Venice.
, or Aulona, anciently a town of Elis,
nnesus, on the confines of Messenia.
a temple of Æsculapius.

AULONIAS, an epithet of Æsculapius. See last article.

AULOS, a Grecian long measure, the same with stadium.

AULTGRANDE, a river of Scotland, in the parish of Kiltearn, in Rosshire, which takes its rise from Loch Glass, and after running six miles falls into the sea. Its course for two of these miles is through a deep chasm of an extensive and rugged precipice, called Craig-grande, or the ugly rock; of which the Rev. Mr. Robertson, in his statistical account of the parish, gives the following description. 'This is a deep chasm or abyss, formed by two opposite precipices that rise perpendicularly to a great height, through which the Aultgrande runs for the space of two miles. It begins at the distance of four miles from the sea, by a bold projection into the channel of the river, which it diminishes in breadth by at least one half. The river continues to run with rapidity for about three quarters of a mile, when it is confined by a sudden jutting out of the rock. Here, the side view from the summit is very striking. The course of the stream being thus impeded, it whirls and foams, and beats with violence against the opposing rock, till, collecting strength, it shoots up perpendicularly with great fury, and forcing its way, darts with the swiftness of an arrow through the winding passage on the other side. After passing this obstruction, it becomes in many places invisible, owing partly to the increasing depth and narrowness of the chasm, and partly to the view being intercepted by the numerous branches of trees which grow on each side of the precipice. About a quarter of a mile further down, the country people have thrown a slight bridge, composed of trunks of trees covered with turf, over the rock, where the chasm is about sixteen feet wide. Here the observer, if he has intrepidity enough to venture himself on such a tottering support, and can look down the gulph below without any uneasy sensations, will be gratified with a view equally awful and astonishing. The wildness of the steep and rugged rocks; the gloomy horror of the cliffs and caverns, inaccessible by mortal tread, and where the genial rays of the sun never yet penetrated; the waterfalls which are heard pouring down in different parts of the precipice, with sounds various in proportion to their distance; the hoarse and hollow murmuring of the river, which runs at the depth of nearly 130 feet below the surface of the earth; fine groves of pines, which majestically climb the sides of a beautiful eminence, that rises immediately from the brink of the chasm; all these objects cannot be contemplated without exciting emotions of wonder and admiration in the mind of every beholder. The appearance of this singular and picturesque scene, will naturally bring to the recollection of the classical spectator those beautiful lines of Virgil, in which he describes the gulph, through which his Alecto shoots herself into the infernal regions:

——densis hunc frondibus atrum
Urget utrinque latus nemoris, medioque fragosus
Dat sonitum saxis et torto vortice torrens
Hic specus horrendum, et saevi spiracula Ditis
Monstrantur; ruptoque ingens Acheronte vorago
Pestiferas aperit fauces.——

Critics may labor to convey the force and meaning of the author's words; and travellers may, by their ingenious descriptions, give us a still more lively idea of their beauty and propriety; but he who would see a living commentary on this noble passage, must visit the rock of Aultgrande.'

AULUS GELLIUS. See GELLIUS.

AUMALE. See ALBEMARLE.

AUME, a Dutch measure for Rhenish wine, containing forty English gallons. The term is now obsolete.

AUMONE, in old law style, alms.—*Bailey*.

Aumone, tenure in, lands given to a church or manastery.

AUMONIER. See ALMONER.

AUNA, the ancient name of Emly, in Ireland.

AUNCEL weight, an ancient kind of balance, prohibited by several statutes, on account of the many deceits practised by it. It consisted of scales hanging on hooks, fastened at each end of a beam, which a man lifted up on his hand. In many parts of England, auncel weight signifies meat sold by the hand, without scales.

AUNCESTER, ancestor.—*Chaucer*.

AUNE, a river of Devonshire, which runs into the sea, east of Plymouth.

Aune, a long measure used in France to measure cloths, stuffs, ribbons, &c. At Rouen, it is equal to one English ell; at Calais, to 1·52; at Lyons, to 1·061; and at Paris, to 0·95.

AUNEAU, or **Auneaux**, a town of France, in the department of the Eure and Loire, arrondissement of Chartres, with 250 houses. It has a castle, and some hosiery manufactures. Here the duke of Guise defeated, in 1587, the Germans who had come to the assistance of the Protestants. Five leagues east of Chartres.

AUNEDONACUM, the ancient name of Fontenay, in France.

AUNGERVILLE (Richard,) commonly known by the name of Richard de Bury, was born in 1281 at St. Edmund's Bury in Suffolk, and educated at the university of Oxford: after which he entered into the order of Benedictine monks, and became tutor to Edward Prince of Wales, afterwards king Edward III. Upon the accession of his royal pupil to the throne, he was first appointed cofferer, then treasurer of the wardrobe; archdeacon of Northampton, prebendary of Lincoln, Sarum, and Litchfield, keeper of the privy seal, dean of Wells, and last of all bishop of Durham. He likewise enjoyed the offices of lord high chancellor and treasurer of England: and discharged two important embassies at the court of France. Learned himself, and a patron of letters, he maintained a correspondence with some of the greatest geniuses of the age, particularly with the celebrated Italian poet Petrarch. He was also of a most humane and benevolent temper, and performed many signal acts of charity. Every week he made eight quarters of wheat into bread, and gave it to the poor. Whenever he travelled between Durham and Newcastle, he distributed £8 sterling in alms; between Durham and Stockton £5, between Durham and Aukland five marks, and between Durham and Middleham £5. He founded a public library at Oxford, for the use of the students, which he furnished with the best collection of books then in England; and appointed five keepers, to whom he granted yearly salaries. At the dissolution of religious houses in the reign of Henry VIII. Durham college, where he fixed the library, being also dissolved, some of the books were removed to the public library, some to Baliol college, and some into the hands of Dr. George Owen, who bought the college of king Edward VI. Bishop Aungerville died at his manor of Aukland, April 24, 1345, and was buried in the south part of the cross isle of the cathedral church of Durham, to which he had been a benefactor. He wrote, 1. Philobiblos, containing directions for the management of his library at Oxford, and a great deal in praise of learning in Latin. 2. Epistolæ Familiarum; some of which are written to the famous Petrarch. 3. Orationes ad Principes; mentioned by Bale and Pitts.

AUNIS, or Aunix, the smallest of the ci-devant provinces in France. It was bounded on the north by Poictou, on the west by the ocean, and on the east and south by Saintogne. It is now comprehended in the department of Lower Charente. It is watered by the Seure and the Charente. The coast has the advantage of several ports, the most remarkable of which are Rochefort, Rochelle, Brouge, St. Martin de Re, Tremblade, Tonnai, and Charente. The soil is dry, yet produces good corn and plenty of wine. The marshes feed a great number of cattle, and the salt marshes yield the best salt in Europe.

AUNT. Some ingenuity is necessary to derive this word from the Fr. *tante*—' Lat. *amita* from *avita*, and this from *avia!* In Todd's Johnson it is deduced from the Old Fr. *ante*, from a Celtic root, a father or mother's sister.

> Who meets us here? my niece Plantagenet,
> Led in the hand of her kind *aunt* of Glo'ster.
> *Shakspeare.*

> She went to plain work, and to purling brooks,
> Old fashion'd halls, dull *aunts*, and croaking rooks.
> *Pope.*

AVOCATORIA, a mandate of the emperor of Germany, addressed to some prince in order to stop proceedings in any cause appealed to him.

AVOCH, or **Auach**, Gael. a ford, a parish in Scotland, Rosshire, on the coast of the Moray Frith, and extending about four miles from south to north, and two and a half from east to west.

AVOID',
Avoid'able,
Avoid'ance,
Avoid'er,
Avoidless. } Fr. *vuider*, or *eviter*. Lat. *evito*. The word *viduus*, in whole or in part, is supposed to be the etymon. To make void or free from, to leave empty, to go out of, to move away from, to leave, to escape. The word *shun* is usually applied to persons, and *avoid* to things. 'Avoid the room,' no longer means, as in Lord Bacon's time, go out of the room, but 'go not into the room.'

> What have you to do here, fellow? pray
> *avoid* the house. *Shakspe*

> If any rebel should be required of the prince
> federate, the prince confederate should comm
> him to *avoid* the country. *Ba*

[illegible] ruin in which the whole empire would
ved. *Dennis's Letters.*
of exactness in such nice experiments is scarce
t. *Boyle.*
ke several things for granted, is hardly *avoid-*
ny one, whose task it is to shew the falsehood
bability of any truth. *Locke.*
what things can there be of greater moment
rtance for men to know or God to reveal, than
are of God and ourselves, the state and con-
f our souls, the only way to *avoid* eternal
and enjoy everlasting bliss. *Stillingfleet.*
ppointed to give us vigour in the pursuit of
good, or in the *avoidance* of what is hurtful.
Watts.

IRDUPOIS, avoir du pois, French. A
weight, of which a pound contains six-
nces, and is in proportion to a pound
s seventeen to fourteen. All the larger
arser commodities are weighed by avoir-
weight. Avoirdupois ounce is less than
y ounce in the proportion of 700 to 768:
avoirdupois pound is greater than the
ound in the proportion of 700 to 576.
RDUPOIS WEIGHT. For the table of its
s, see ARITHMETIC.

KE, }
CATE, } Lat. *avoca, avocatum*, I call; from *a*, and *voco*. Evoke is now
CA'TION. } used instead of the verb. Avo-
are those engagements which call off our
d attention from other things.

have written to your grace in our common
r a confirmation of many inconveniences and
which we persuaded to his Holiness, to follow
himself and to the see apostolick, in case his
should *avoke* the cause.
Burnet's Reform Records, vol. i.
what is a scholar, but one who retireth his
and *avocateth* his mind, from other occupations
dly entertainments. *Barrow's Sermons.*
w ought not to be suffered to increase by in-
t, but must give way after a stated time to
ties and the common *avocations* of life.
Johnson.
could I select with such perfect propriety as
, who, like the younger Scipio, can so usefully
he *avocations* of business with elegant litera-
Dr. Stuart's Dedication of Sallust.

LA'TION. Lat. *avolatio* (*a volo*), a fly-
y from.

airy vegetables are made by the relicks of
missives, whose *avolation* was prevented by
[illegible] enclosure. *Glanville's Scepsis.*
ers, or the fungous parcels about candles,
ify a pluvious air, hindering the *avolation* of
ous particles. *Brown's Vulgar Errours.*

N, the name of four rivers in England;
ising in Leicestershire, runs south-west
wick and Evesham, and falls into the
t Tewksbury; 2. in Monmouthshire; 3.
Wiltshire, coasts the edge of the New
and enters the English channel at Christ
Bay in Hampshire; and 4. the Lower
which rises near Tetbury in Glocestersh.
ning west to Bath, becomes navigable;
s its course to Bristol, and falls into the
north-west of that city.

NA PORTICOSA, the ancient name of the
anda.

AVOSETTA, in ornithology. See RECURVIROSTRA.

AVOU'CH, *v.* & *n.* }
AVOU'CHER, } Fr. *avouer*, to affirm. To maintain, declare ab-
AVOUCH'MENT. } solutely, to vindicate, to justify, to corroborate, to answer for the truth of, to support a statment with documents.

They boldly *avouched* that themselves only had the truth, which they would at all times defend.
Hooker.

Wretched though I seem,
I can produce a champion that will prove
What is *avouched* here. *Shakspeare. King Lear.*
Such authours and *avouchers* of thinges.
Udall. Luke, cap. i.

But I maruail much that maister Moore beyng a great learned man, would not for the *avouchement* of his credite, and the truth of so great a matter, allege so much as the testimonie and auctoritie of some one aucthor, for the prouyng of his assertion.
Grafton, vol. i.

AVOW, *v.* & *n.*
AVOW'ABLE,
AVOV'AL,
AVOW'ED,
AVOW'EDLY,
AVOW'ER,
AVOW'RY.

Fr. *avouer*. Lat. *Voveo*, I vow or promise. To make a solemn declaration, to acknowledge, to confess.

His cruel stepdame, seeing what was done,
Her wicked days with wretched knife did end;
In death *avowing* th' innocence of her son.
Faerie Queene.

Wilmot could not *avowedly* have excepted against the other. *Clarendon.*

He that delivers them mentions his doing it upon his own particular knowledge, or the relation of some credible person, *avowing* it upon his own experience.
Boyle.

Left to myself, I must *avow*, I strove
From publick shame to screen my secret love.
Dryden.

Virgil makes Æneas a bold *avower* of his own virtues.
Id.

Such assertions proceed from principles which cannot be *avowed* by those who are for preserving church and state. *Swift.*

This management, when no *avowable* reason could be given for it, gave suspicious and refining persons occasion to throw out a great deal of slander.
Bolingbroke.

Then blaz'd his smother'd flame, *avow'd* and bold.
Thomson.

AU-PIS-ALLER, a French phrase, sometimes used among English writers, signifying at the worst.

AURA, among physiologists, an airy exhalation or vapor. The word is Latin, derived from the Greek, αυρα, gentle wind.

AURA, in chemistry, a name given to that certain fine and pure spirit, found in every animal or vegetable body; but so subtle, as only to be perceptible by its smell and taste, or other effects, not found in any other body. This aura, says Boerhaave, exhibits the proper character of the body, and is lodged in the oil of the body, to prevent its being dissipated and thrown off.

AURA, in ornithology, a species of vulture.

AURACH, a town of Germany, with a good castle, in the south part of Suabia, in the duchy of Wirtemberg. It is the usual residence of the youngest sons of the house of Wirtemberg; is seated at the foot of a mountain on the rivulet Ermst, fifteen miles east of Tubingen.

AURÆ, in mythology, a name given by the Romans to the nymphs of the air. They are mostly to be found in the ancient paintings of ceilings; where they are represented as light and airy, generally with long robes and flying veils of some lively color or other, and fluttering about in the rare and pleasing element assigned to them. They were characterised as sportive and happy in themselves, and wellwishers to mankind.

AVRANCHES, a town of Lower Normandy, formerly the capital of the district called Avranchin, and now of an arrondissement in the department of La Manche. It stands on a hill near the Seez, and commands an extensive prospect of the surrounding country. It was formerly the see of a bishop, whose palace still remains, and who was suffragan to the archbishop of Rouen. The cathedral was founded in 1120. It is only half a league distant from the sea, and the tide brings up small vessels close to the town. The inhabitants carry on a traffic in grain, flax, hemp, cattle, butter, wheat, salt, and cyder, which is here made of an excellent quality. Provisions and fuel are both cheap. Population about 6000. Avranches was much resorted to by the English after the peace of 1814. It lies 222 miles due west of Paris. Long. 1° 17′ W., lat. 48° 41′ N.

AURANTIA, in botany, a natural order, comprehending the entire orange tribe. Jussieu is the author of this order, the seventieth in his arrangement; nor are there any traces of it among the fragmenta of Linnæus. CAL. one leaf, often deeply divided. PET. definite, broad at the base, inserted round a disk on which the germen is placed. STAM. placed on the same disk. GERM. one; style one; stigma simple, or rarely divided. Fruit mostly pulpy, sometimes capsular, of one or many cells, with one or two seeds in each. This order is divided into three sections, according to the seed contained in the fruit. 1. Fruit with only one seed. The leaves are not marked with resinous dots, and hence the plants of this section are termed spurious aurantia. 2. Fruit many-seeded, pulpy. These are genuine aurantia, having the leaves full of pellucid resinous dots. 3. Fruit many-seeded, capsular. Leaves not dotted. Genera akin to aurantia and to meliæ.

AURANTIAM, in botany. See CITRUS.

AURANTIUS PISCIS, in ichthyology, a name given by Nieremberg to the dorado, or dolphin, a species of the coryphæna, distinguished from the others by its forked tail.

AURARIA FUNCTIO, pensio, or præstatio, a tax to be paid in gold.

AURATA, in ichthyology, the fish called gilt head.

AURAY, a town in the province of Bretagne, in France, a department of Morbihans, arrondissement of L'Orient, and the head of a canton. It stands on the gulf of Morbihan, and has a harbour, with considerable trade in corn, honey, skins, and salted fish. The only manufactures are a few woollen stuffs. It trades principally with Spain, and receives in exchange for the
above-mentioned articles, Biscay-iron an
Population 3200. Four leagues W. of
Long. 2° 53′ W., lat. 47° 40′ N.

AUREA ALEXANDRINA, in pharmacy,
of opiate, or antidote against the cholic a
plexy, composed of a great number of
dients, which was in great fame among
cient writers. It is called aurea, from t
(aurum) which is an ingredient in its co
tion; and Alexandria, as having been i
by a physician named Alexander.

AUREA CHERSONESUS, a name given
cient authors to Japan.

AUREAPOLIS, an ancient town of
now called Ingolstadt.

AU'REAT, } Lat. *aurum*, gold; pa
AURIFE'ROUS. } of the nature and qual
gold. Poetical epithets.

> And sum departe in freklis rede quhyt
> Sum bricht as gold with *aureate* leuis lyte
> *Douglas. Eneados*, Prol. to book xii.
>
> Rocks rich in gems, and mountains big wit
> Whence many a bursting stream *auriferous* pl

AURELIA, in natural history, the sa
what is usually called chrysalis, and so
nymph. See CHRYSALIS.

AURELIA, the ancient name of Orleans

AURELIANUS, Cœlius, or, as sou
called him, Lucius Cœlius Arianus, an
physician, and the only one of the sect of
thodists of whom we have any remains,
Sicca, a town of Numidia in Africa.
learn from the elder Pliny, and his styl
resembles that of the African writers. I
Greek, half Latin, harsh, and difficult; ye
masculine, full of good sense, and valu
the matter it contains. It is frequent
acute and smart, especially where he exp
errors of other physicians, and always
What age Cœlius Aurelianus flourished in
be determined; but it is probable that
before Galen, as he does not make the le
tion of him. He was not only a careful
of Soranus, but also a strennous advo
him. He had read over very diligently
cient physicians of all the sects; and to
are indebted for the knowledge of many
which are not to be found but in his boo
Celeribus et Tardis Passionibus.' The
tion of these books is that published at
dam, 1722, in quarto. He wrote, as he
tells us, several other works; but they
perished.

AURELIANUS (Lucius Domitius), em
Rome, was one of the greatest generals
quity, and commanded the armies of the
Claudius II. with such glory, that, after t
of that emperor, the legions agreed to pl
on the throne, A.D. 270. He was a n
Dacia, born of obscure parentage, a
elected emperor in the fifty-fifth year of
He was a man of amazing strength and
and had risen through all the gradations
tary duty. In one engagement he is
nave killed forty of the enemy with
hand; and, in the various battles in w
was engaged, above 900 in all. He ca
war from the east to the west with as m

odern writer, as a body of troops
Alsace into Flanders. He de-
ths, Sarmatians, Marcomanni, the
ptians, and Vandals; conquered
n of the Palmyrenians, and Tetri-
f the Gauls, both of whom graced
274. In a word, for valor and
e might be compared to Julius
possessed equal clemency and mo-
showed great clemency indeed to
a, although he destroyed her city,
r lands and an income sufficient to
in all the splendor of her former
at the trouble of it. But his gene-
princess was sullied by his order-
ary, Longinus, the celebrated critic,
death, whose work on the sublime
e procured him respect from any
gree removed from barbarism. His
e at last the cause of his destruc-
eus, his secretary, conspired against
vas slain by one of his generals in
a small guard from Heraclea in
ds Byzantium, A.D. 275, after a
ign of five years. See ROME.

, or ARELLI, a Latin poet of the
ury, who obtained the government
rom Leo X. but whose tyrannical
de the inhabitants throw him into a
0. His poems are much in the
tullus.

ABAD, or AURUNGABAD. See AU-

-ZEBE, the Great Mogul, was the
hah Iehan. He was born in 1618,
th feigned an air of religious sanc-
1658 he and his brother Morad
nd took their father prisoner. Not
put Morad and Dara, another bro-
He, however, showed some ten-
ds his father, who died in 1666.
increased his dominions so much,
o powerful, that ambassadors were
om all the eastern princes; and for
mmercial advantages, many Euro-
did the same. He died at Ahmed-
7, aged eighty-nine. His posses-
y his will, divided among his sons.
low stature, with a large nose, a
and olive complexion. He was
supported himself on a staff; yet
petitions without spectacles, and
d with doing business at a public
e subdued Visapour, Golconda,
tic; overran the kingdom of Asen;
al; and cleared the mouth of the
the Portuguese pirates. He had
gn to destroy all the native princes,
a conversion of the Hindoos; but
is turn by the rebellion of his sons,
d to put off the execution of this
ndeavour. By his indulgence to-
rahs and governors his meaner sub-
pressed with impunity. 'God,' he
his usual sanctimonious manner,
h them if they did evil.' The real
se was, that he shared in the fruits
ssion.

A, in ecclesiastical antiquity, originally signified a jewel, proposed as a reward of victory in some public dispute. Hence the Roman schoolmen applied it to denote the reward bestowed on martyrs, virgins, and doctors, on account of their works of supererogation; and painters use it to signify the crown of glory with which they adorn the heads of saints, confessors, &c.

AUREOLUS, a Dacian shepherd, who aspired to the empire, but was defeated and slain by Claudius, a general of the emperor Gallienus. This usurper is known by some medals bearing on one side his head, crowned with rays, as in the annexed figure, inscription IMP. M. ACIL. AUREOLUS P. F. AUG. on the reverse a goddess, resting on a pillar, with a sceptre in her right hand, a cornucopia in her left, and a globe at her feet, inscription PROVIDENTIA AUG.

AUREUS, a Roman gold coin, equal in value to twenty-five denarii, or 100 sesterces. According to Ainsworth, the aureus of the higher empire weighed nearly five pennyweights; and in the lower empire little more than half that weight. Suetonius says, that it was customary to give aurei to the victors in the chariot races.

AUREUS MONS, in ancient geography, 1. A mountain in the north-west of Corsica, whose ridge runs out to the north-east and south-east, forming an elbow. 2. Another of Mœsia Superior, or Servia, south of the Danube, which the emperor Probus planted with vines; and 3. A town at the foot of it, on the same river.

AURIA (Vincent), a Sicilian writer, born at Palermo, 1625. He was author of several works in Latin and Italian; but the principal are a History of the most eminent Men of Sicily, 1704; and a History of the Viceroys of Sicily, 1697, folio. He died in 1710.

AURICHALCUM, ορειχαλκον, mountain-brass; from ορος, a mountain, and χαλκος, brass; the metal now called brass being a mixture of copper and lapis calaminaris. It is called aurichalcum by Plautus, and orichalcum by Virgil and Horace. Plaut. Mil. act iii. scene 1. v. 64.

> Cedo mihi tres homines aurichalco contra cum istis moribus.

AURICULA, in botany. See PRIMULA.

AURICULA, in ichthyology, the earwig.

AURICULA JUDÆ, or JEW'S EAR, a kind or fungus, or mushroom, somewhat resembling in figure a human ear. It grows on elder-trees, the tree on which, as some pretend, Judas hanged himself; and hence, they think, the name is derived. This fungus steeped in water and applied to the eyes, is said to free them of inflammation; but its chief use is in the form of a gargle in decoctions against inflammations of the throat, or swellings of the tonsils.

AURIC'ULAR, } Lat. *auricula*, flap of the **AURIC'ULARLY.** } ear; sometimes the ear itself. Addressed to the ear—as much as to say, to go no further. Private, secret, confidential.

> You shall hear us confer, and by an *auricular* assurance have your satisfaction.
> *Shakspeare. King Lear.*

> The alchymists call in many varieties out of astrology, *auricular* traditions, and feigned testimonies.
> *Bacon.*

> These will soon confess, and that not *auricularly*, but in a loud and audible voice. *Decay of Piety.*

AURICULATED LEAF, in botany, is a leaf which has a lobe on each side towards the base.

AURIFLAMMA, in the French history, a standard belonging to the abbey of St. Dennis, suspended over the tomb of that saint, which the religious, on occasion of any war in defence of their land or rights, took down, with great ceremony, and gave to their protector or advocate, to be borne at the head of their forces. Hence the word is sometimes used to denote the chief flag or standard of an army.

AURIGA, the waggoner, in astronomy, a constellation of the northern hemisphere, consisting of twenty-three stars, according to Tycho; forty, according to Hevelius; and sixty-eight, in the Britannic catalogue. It is figured as an old man with a goat, her kids in his left hand, and a bridle in his right. Capella, the goat, is a star of the first magnitude. Its rising was deemed by the ancients a prognostic of rain.

AURIGNAC, a town of Gascony, the head of a canton, in the department of the Upper Garonne, arrondissement of St. Gaudens. The inhabitants, who amount to about 1230, trade in cattle, and manufacture woollen goods. It is seated on the river Louge, fourteen leagues S. E. of Toulouse.

AURIGNY, a small island in the English channel, belonging now to England, twenty miles north from Jersey, and seven west of Cape La Hogue. Long. 2° 9′ E., lat. 49° 43′ N.

AURIGRAPHUS; from aurum, gold, and γραφω, I write; in the middle age, writers, a copyist, or calligrapher, who wrote in gold letters.

AURILLAC, a town of France, on the Jordane, in Upper Auvergne. At present it is the chief town in the department of the Cantal. Here are manufactures of woollen stuffs, carpets, stamine, shalloon, and lace; in which, as well as in cattle and cheese, an active trade is carried on. Population 10,332 in 1815. Fifteen leagues southeast of Tulle, and 111 south of Paris. Long. 2° 31′ E., lat. 44° 55′ N.

AURIOL, a town of France, in the department of the Bouches du Rhone, arrondissement of Marseilles. Here are some woollen manufactures. Population 3700, five leagues northeast of Marseilles.

AURIPIGMENTUM. See ORPIMENT.

AURIS, the ear. See ANATOMY, Index.

AURIS ASINI, ass-ears, a name given by naturalists to a species of sea-shell, supposed to resemble the ear of an ass.

AURIS EXTERNA, the auricle.

AURIS MARINA, ear-shell.

AURIS PORCI, hog's ear, in natural history, a sea-shell, a species of the murex.

AURISCALPUM, an instrument to clean the ears, and serving also for other op
orders of that part.

AURISPA (John), a Sicilia
was appointed secretary to Nic
whom he obtained two abbeys.
Ferrara, at the end of the fifteenth
translated the works of Archimed
cle's Commentary on the golden
thagoras.

AUROGALLUS (Matthew), p
guages at Wittemberg, was a nati
he assisted Luther in his translatio
into German, and wrote a Hebre
Grammar, printed at Basle in 15
in 1543.

AURIUM ABSCISSIO, cutting
was a punishment inflicted, by th
on those who robbed churches;
every thief; and, at length, on di
minals.

AURON, a river of France, in t
of Cher, anciently called Avara.

AURORA, in the mythology, t
the morning, was the daughter of
Theia, according to Hesiod; but
Terra, according to others. It w
name that the ancients deified th
foreruns the rising of the sun ab
sphere. The poets represent her a
the ocean in a chariot, with rosy fir
gentle dew. Virgil describes her
flame colored chariot with four hor
various lovers, Cephalus, Pandi
&c. Aurora is also used for the
light, or that faint light which a
morning when the sun is within 18°

AURORA, one of the New Hebri
the South Sea, in which Mr. For
the Peak d'Etoil, mentioned by M
to be situated. The island is in
none of its inhabitants came off to
Cook. The country is woody, a
tation seemed to be excessively lu
about twelve leagues long, but n
miles broad in any part; lying nea
south. The middle lies in long. 16
15° 6′ S.

AURORA AUSTRALIS, SOUTHER
STREAMERS, similar to the auror
northern light, only more clear an
AURORA BOREALIS.

AURORA BOREALIS, NORTHERN
Streamers; a kind of meteor app
northern parts of the heavens, n
winter-time, and in frosty weather.
generally known, that no descriptio
of the appearance which it usually
country. But it is in the arctic re
appears most remarkable, partic
the solstice. In the Shetland islan
dancers, as they are there called, ar
attendants of clear evenings. The
appear at twilight near the horiz
approaching to yellow; sometim
for several hours without any sen
after which they break out into strea
light, spreading into columns, and a
into ten thousand different shapes,
colors from all the tints of yellow to
russet. They often cover the whol

and then make the most brilliant appearance. Their motions at these times are most amazingly quick; and they astonish the spectator with the rapid change of their form. They break out in places where none were seen before; darting along the heavens, are suddenly extinguished, and leave behind an uniform dusky tract. This again is brilliantly illuminated in the same manner, and as suddenly left a dull blank. Sometimes they assume the appearance of vast columns, on one side of the deepest yellow, on the other declining away till it becomes undistinguishable from the sky. They have generally a tremulous motion from end to end, which continues till the whole vanishes. In a word, we, who only see the extremities of these northern phenomena, have but a faint idea of their splendor and their motions. According to the state of the atmosphere, they differ in colors. They often put on the color of blood, and make a dreadful appearance. The rustic sages become prophetic, and terrify the gazing spectators with the dread of war, pestilence, and famine. This superstition was not peculiar to the northern islands; nor are these appearances of a recent date. The ancients called them Chasmata, and Trabes, and Bolides, according to their forms or colors. The Aurora Borealis in this country, appears usually of a reddish color, inclining to yellow, and sends out frequent coruscations of pale light, which seem to rise from the horizon in a pyramidal undulating form, and shooting with great velocity up to the zenith. They appear often in the form of an arch, which is partly bright, and partly dark, but generally transparent: and the matter of them is not found to have any effect on the rays of light, which pass freely through them. Dr. Hamilton observes, that he could plainly discern the smallest speck in the Pleiades through the density of those clouds which formed part of the aurora borealis in 1763, without the least diminution of its splendor, or increase of twinkling. Sometimes it produces an iris; and hence, M. Godin judges, that most of the extraordinary meteors and phenomena in the skies, related as prodigies by historians, as battles, and the like, may probably enough be reduced to the class of aurora borealis. This kind of meteor never appears near the equator; but it seems, is frequent enough towards the south pole, like as towards the north, having been observed there by voyagers. See Philosophical Transactions, No. 461, and vol. liv.; also Forster's account of his voyage round the world with Captain Cook, where he describes their appearance, as observed for several nights together, in sharp frosty weather, which was much the same as those observed in the north, excepting that they were of a lighter color. Meteors of this kind have appeared more frequently at some periods than others; whence it would seem, that the air, or earth, or both, is not at all times disposed to produce this phenomenon. The extent of these appearances is also amazingly great. That which occurred in March, 1716, was visible from the west of Ireland to the confines of Russia, and the east of Poland; extending at least near thirty degrees of longitude, and from about the fiftieth degree in latitude, over almost all the north of Europe; and in all places, at the same time, it exhibited the like wondrous appearances. Father Boscovich has determined the height of an aurora borealis, which was observed by the marquis of Polini the 16th of December, 1737, and found it was 825 miles high; and Mr. Bergman, from a mean of thirty computations, makes the average height of the aurora borealis amount to seventy Swedish, or 469 English miles. But Euler supposes the height to be several thousands of miles; and Mairan also assigns to them a very elevated region. Many attempts have been made to determine the cause of this phenomenon. Dr. Halley imagines that the vapors, or effluvia, exceedingly rarefied by subterraneous fire, and tinged with sulphureous steams, which many naturalists have supposed to be the cause of earthquakes, may also be the cause of this appearance; or that it is produced by a kind of subtile matter, freely pervading the pores of the earth, and which, entering into it nearer the southern pole, passes out again with some force into the æther, at the same distance from the northern. This subtile matter, by becoming more dense, or having its velocity increased, may perhaps be capable of producing a small degree of light, after the manner of effluvia from electric bodies, which, by a strong and quick friction, emit light in the dark; to which sort of light this seems to have an affinity. On this subject see Philosophical Transactions No. 347; and also Mr. Cotes's description of this phenomenon, and his method of explaining it, by streams emitted from the heterogeneous and fermenting vapors of the atmosphere, in Smith's Optics, p. 69. The celebrated M. de Mairan, in an express treatise on the aurora borealis, published in 1731, supposes its cause to be the zodiacal light, which according to him, is no other than the sun's atmosphere; this light happening, on some occasions, to meet the upper part of our atmosphere about the limits where universal gravity begins to act more forcibly towards the sun, falls into our air to a greater or less depth, as its specific gravity is greater or less compared with the air through which it passes. However, M. Euler thinks the cause of the aurora borealis not owing to the zodiacal light, as M. de Mairan supposes: but to particles of our atmosphere, driven beyond its limits by the impulse of the solar light. And on this supposition he endeavours to account for the phenomena observed concerning this light. He supposes the zodiacal light, and the tails of comets, to be owing to a similar cause. But ever since the identity of lightning and the electric matter has been determined, philosophers have been naturally led to seek for the explication of aerial meteors in the principles of electricity; and there is now no doubt but most of them, and especially the aurora borealis, are electrical phenomena. Besides the more obvious and known appearances which constitute a resemblance between this meteor and the electric matter by which lightning is produced, it has been observed that the aurora occasions a very sensible fluctuation in the magnetic needle; and that when it has extended lower than usual in the atmosphere, the flashes

have been attended with various sounds of rumbling and hissing, especially in Russia and the other more northern parts of Europe; as noticed by Sig. Beccaria and M. Messier. Mr. Canton, soon after he had obtained electricity from the clouds, offered a conjecture, that the aurora is occasioned by the dashing of electric fire positive towards negative clouds at a great distance, through the upper part of the atmosphere, where the resistance is least; and he supposes that the aurora which happens at the time when the magnetic needle is disturbed by the heat of the earth, is the electricity of the heated air above it: and this appears chiefly in the northern regions, as the alteration in the heat of the air of those parts is the greatest. Nor is this hypothesis improbable, when it is considered, that electricity is the cause of thunder and lightning; that it has been extracted from the air at the time of the aurora borealis; that the inhabitants of the northern countries observe it remarkably strong, when a sudden thaw succeeds very cold severe weather; and that the tourmalin is known to emit and absorb the electric fluid only by the increase or diminution of its heat. Positive and negative electricity in the air, with a proper quantity of moisture to serve as a conductor, will account for this and other meteors, sometimes seen in a serene sky. Mr. Canton has since contrived to exhibit this meteor by means of the Torricellian vacuum, in a glass tube about three feet long, and sealed hermetically. When one end of the tube is held in the hand, and the other applied to the conductor, the whole tube will be illuminated from end to end, and will continue luminous without interruption for a considerable time after it has been removed from the conductor. If, after this, it be drawn through the hand either way, the light will be remarkably intense through the whole length of the tube. And though a great part of the electricity be discharged by this operation, it will still flash at intervals, when held only at one extremity, and kept quite still; but if, at the same time, it be grasped by the other hand in a different place, strong flashes of light will dart from one end to the other; and these will continue twenty-four hours or more, without a fresh excitation. Sig. Baccaria conjectures that there is a constant and regular circulation of the electric fluid from north to south; and he thinks that the aurora borealis may be this electric matter performing its circulation in such a state of the atmosphere as renders it visible, or approaching nearer than usual to the earth; though probably this is not the mode of its operation, as the meteor is observed in the southern hemisphere, with the same appearances as in the northern. Dr. Franklin supposes, that the electric fire discharged into the polar regions, from many leagues of vaporised air raised from the ocean between the tropics, accounts for the aurora borealis; and that it appears first where it is first in motion; namely, in the most northern parts; and the appearances proceed southward, though the fire really moves northward. Mr. Kirwan, in the Transactions of the Royal Irish Academy, anno 1788, has also some ingenious remarks on the aurora borealis and australis. He gives his reasons for supposing the rarefaction of the a
mosphere in the polar regions to proceed fr
them, and these from a combustion of inflamma
ble air caused by electricity. He observes, th
after an aurora borealis the barometer commonl
falls, and high winds from the south generall
follow. The only distinct history of this phen
menon is what we have from Dr. Halley, Philos
phical Transactions, No. 347. Mr. Forster, wh
in his voyage round the world with Captain Coo
assures us, that he observed them in the hig
southern latitudes, though with phenomena som
what different from those which are seen her
On February 17th, 1773, as they were in th
fifty-eighth degree of south latitude, 'A beauti
phenomenon,' says he, 'was observed during th
preceding night, which appeared again this an
several following nights. It consisted of lo
columns of a clear white light, shooting up fro
the horizon to the eastward, almost to the zenit
and gradually spreading on the whole souther
part of the sky. These columns were sometim
bent sideways at their upper extremities; an
though in most respects similar to the norther
lights (auroræ boreales) of our hemisphere, y
differed from them in being always of a whit
color, whereas ours assume various tints, esp
cially those of a fiery and purple hue. The s
was generally clear when they appeared, and t
air sharp and cold, the thermometer standing
the freezing point.' These are what Mr. Kirwa
denominates aurora australis.

M. Libes, in his Nouv. Dict. de Physique, h
suggested a new theory, which is adopted
most of the northern philosophers. In his o
nion electrical light is not the cause of the aur
boreales; nor has electricity itself any furth
influence upon their existence than as it fixes t
aeriform substances whose combinations occasi
the meteor. This philosopher's theory is found
upon the following principles:—1. If we exc
the electric spark in a mixture of azotic and ox
gen gas, there will result nitric acid, nitrous ac
or nitrous gas, according to the relation that su
sists between the gases which compose the mi
ture. 2. Nitric acid, when exposed to the su
assumes more color and volatility. Scheele fir
observed this phenomenon. Libes placed a r
ceiver over a salver containing nitric acid, an
exposed to the action of the solar rays. Som
minutes after, the acid appeared colored, and th
receiver filled with red and volatile vapors, whi
were sustained in it a long while, and diffused
light similar to that of the aurora borealis.
In flasks, which contain nitrous acid, a rud
and volatile vapor is always perceived above th
vapor. 4. Nitrous gas, in contact with atmo
pheric air, exhales ruddy vapors, which fly
into the atmosphere. 5. The hydrogen, whi
is disengaged from the surface of the globe, ri
till it occupies, in the higher regions of the
mosphere, a place determined by its speci
gravity. 6. The solar heat has very little acti
in the polar regions.

These principles rest upon observations a
experiments made with the greatest exactne
and most of them too well known to need bei
described here. Now it is manifest from a si
ple combination of these facts:—1. That th

production of hydrogen must be almost nothing in the polar regions. 2. That the higher regions of the polar atmosphere contain very little if any hydrogen. 3. That whenever there is a re-establishment of equilibrium of the electric fluid in the polar atmosphere, this fluid can only find in its passage a mixture of azot and oxygen. 4. That the electric spark ought to fix and combine these gaseous substances. 5. That from this combination must result a production of nitrous acid, of nitric acid, or of nitrous gas, according to the relation subsisting between the oxygen and azot that constitute the mixture. 6. That the productions of either of these acids, or of the gas, will give birth to red and volatile vapors, whose elevation in the atmosphere will form the meteor known under the name of the aurora borealis.

After removing some general objections to these preliminary notions, M. Libes applies them to the phenomena below:

1st *Phenomenon.*—The auroræ boreales are sometimes accompanied by slight detonations.

In the polar regions, the production of hydrogen is next to nothing, by reason of the little activity of the solar heat. It is nevertheless true, that in summer the long duration of the sun above the horizon causes even there a heat sufficiently considerable to produce the disengagement of some small portion of hydrogen, which will rise up to the higher regions of the atmosphere: whence it results, that if the re-establishment of equilibrium of the electric fluid takes place in the polar atmosphere, when its superior strata contain this gaseous substance, the electric spark must exert upon it a part of its activity, and produce slight detonations.

2d *Phenomenon.*—The major part of auroræ boreales appear to move from the north towards the south; though some are seen whose motion is directed towards the east and west.

The nitric acid, nitrous acid, and nitrous gas, which give birth to auroræ boreales, have their origin towards the poles. These substances exhale ruddy vapors, which, as they rise in the atmosphere, must direct their motion towards the place where they meet with least resistance; which is, of course, towards the south, where the air, always less dense than about the north, offers them a more free and easy passage. It may also happen that at the same time these ruddy vapors are formed, a northerly wind may blow in the upper region of the atmosphere, and thus give them a strong impulsion, which, combined with the preceding general tendency southward, may cause a resulting motion to be sometimes southward, at others eastward, or westward.

3d *Phenomenon.*—The auroræ boreales sometimes exhibit themselves under the form of luminous columns having different figures and different directions. Some are cylindrical, others pyramidal, others are curved in the shape of an arc. When they are impelled with much activity, they proceed to the zenith of the spectator. Those whose motion is still more rapid, go on beyond the zenith, sometimes even till they reach the southern horizon. They do not always rise directly from the centre of the cloudy part towards the zenith; but sometimes take a lateral direction, especially when the cloud from whence they spring is found suspended between the north and the east or west.

When the re-establishment of equilibrium of the electric fluid fixes and combines a great quantity of azote and oxygen, the ruddy vapors resulting from this combination must occupy a large space in the atmosphere. These vapors being of such considerable extent, and impelled from north to south, must sometimes separate from one another, the different portions receiving various directions; thus they will be carried sometimes perpendicularly, at others parallel to the horizon; at others parallel to the earth's axis; whence it follows that the aurora borealis must sometimes appear to the observer in the form of columns, whose number, figure, and direction, are determined by circumstances. It may also sometimes happen that these luminous columns remain for a time immovable with respect to the horizon. This ought to be the case whenever a wind impels the luminous cloud towards any part whatever from the south, with the same force as the exhalations are impelled towards it by a contrary wind.

4th *Phenomenon*—The auroræ boreales do not all shine with an equally vivid lustre; some have a mild and tranquil light, others shine with a very resplendent brilliancy.

The vapors which are disengaged from nitric acid exposed to the solar rays, diffuse a mild light of a clear red, verging towards yellow; those which are perceived above them from nitrous acid, are of a deep red; those exhaled from the nitrous gas, in contact with the atmospheric air, are at first of a pretty deep red, which afterwards become more and more clear and light, as these vapors extend themselves more in the atmosphere. The luminous columns, therefore, presented by the aurora borealis, have different colors, according as the ruddy vapors take their rise from the formation of the nitric acid, of the nitrous acid, or of the nitrous gas. Retrospect of Philosophic, &c. Discoveries, No. 8. Our countryman, Mr. Dalton, is of opinion that the aurora borealis is a magnetic phenomenon, the beams being governed by the earth's magnetism. See his Meteorological Essays, and Gregory's Astronomical and Philosophical Lessons. See our article ELECTRICITY.

AURORA SURGENS, in alchemy, a phrase used to express the multiplicative virtue of the philosophers' stone.

AURUM, Latin, gold. See GOLD, CHEMISTRY, and METALLURGY. This metal was introduced into medicine by the Arabians, who esteemed it one of the greatest cordials and comforters of the nerves. From them Europe received it without any diminution of its character; in foreign pharmacopœias it is still retained, and even mixed with the ingredients from which simple waters are to be distilled. But no one, it is presumed, at this time expects any singular virtues from it, since it certainly is not alterable in the human body. Former chemists endeavoured, by many elaborate processes, to extract what they call a sulphur anima, or spirit of gold; but no method is as yet known of separating the component parts of this metal: all the tinctures of it, and aurum potabile, which have hitherto appeared, are real solutions of it in aqua regia, diluted with spirit of wine or other liquors, and prove injurious to the body rather than beneficial. A place, however, is now given in some of the foreign pharmacopœias to the aurum fulminans; and it has been recommended as a remedy in convulsive diseases, particularly in the chorea sancti viti.

Aurum Fulminans is a dangerous preparation, and should be used with great caution. A scruple of this powder acts more forcibly than half a pound of gunpowder: a single grain laid on the point of a knife, and lighted at a candle, goes off with a greater noise than a musket. Dr. Black attributes the increase of weight, and the explosive property of this powder, to adhering fixable air. See Chemistry, Index.

Aurum Mosaicum, Aurum Musivum, a preparation so called from its golden color, made of mercury, tin, sal ammoniac, and flowers of sulphur. It is recommended in most chronical and nervous cases; and particularly convulsions of children. Its dose is from four grains to a scruple. It is also used as a pigment, and for mixing with glass, to imitate the spangles of the lapis lazuli. Mosaic gold is composed of 100 tin + 56·25 sulphur, by Dr. John Davy; and of 100 tin + 52·3 sulphur, by Professor Berzelius; the mean of which, or 100 + 54·2 is probably correct. It will then consist of 1 prime of tin = 7·375 + 2 sulphur = 4·0.

Aurum Potabile, or tincture of gold; a medicine formerly in great request, but at present rarely used. It is prepared by mixing essential oil of rosemary with a solution of gold in aqua regia; and after shaking the vessel, the gold is retained in the oil, swimming on the top. The very name imposes on many people, and gives an opportunity to empirics to cheat them; for they draw tinctures from ingredients whose colors come near to that of gold, and sell them at an exorbitant rate under this title. This sort of deceit generally succeeds best; for patients are prepossessed in favor of such medicines as cost much, carry great names, and have a specious appearance. It often happens that these tinctures produce some good effects, because they can make them with such spirituous menstrua, as comfort the patient, and expel humors by perspiration; then the effect is extolled for a miracle, and attributed to the imaginary gold.

Aurum Reginæ. See Queen-Gold.

Aurum Sophisticum, mimic gold, a chemical preparation made as follows: take fine distilled verdigris, eight ounces; crude Alexandrian tutty, four ounces; borax, twelve ounces; salt-petre, one ounce and a half; pulverise and mix them all together, tempering them with oil to the consistence of a plaster; then put a German crucible into a wind furnace, heat it red hot, and putting your mass into it, let it be covered, and the furnace filled with coals over the crucible. When the mass is melted, let it cool of itself, then break the crucible, and you will find at the bottom a fine regulus, like gold, weighing about four ounces, which being malleable may be wrought into any form.

Aurum Vegetabile, Saffron.

AURUNCI, in ancient geography, a Latium, towards Campania; the same Ausones, at least so intermixed as n distinguishable, though Pliny makes a di

AURUNGABAD, (so called from tl Emperor Aureng-zebe), a province of the Hindostan, principally divided betw Mahrattas and the Nizan; the former p about three-fourths of its area, and st cluding the islands of Salsette and Bon longing to the British. It is bounded north by Gujerat, Candesh, and Berar east by Berar and Hyderabad; south poor and Boeder; and west by the o length being about 300 miles, and its breadth 160 miles. Although this pr hilly throughout, it gives rise to no consequence. The Beemah and G which have their sources in the same ne hood (about thirty miles east of Poonah principal streams. On the banks of th are reared the strongest Mahratta hors the Beemarheddy breed, and the whole is fertile, particularly in rice. Its nat nesses have been in numerous places for art; and under the warlike dominio Mahrattas have been rendered at once curity and curse of the country. These are principally occupied by independe tains, who pay a sort of feudal homa Paishwa, but are in reality the lords of The population is about six millions, c mainly of Brahminical Hindoos. Ahme Aurungabad, Basseen, Damaura, Do and Jalnapoor, are the chief towns. In t Ahmednuggar it will be seen that an ind sovereignty of that name, which incl greater part of this province, was establis at the close of the sixteenth century. A afterwards (1601 to 1630), we find the called by the name of another princip Dowletabad, the seat of the Nizam Sh nasty, which being taken in 1634 by the the government was transferred to G former name of the city of Aurungab East India Company's forces at Bom mand the whole of the coast, which swa native pirates. See Ahmednuggar.

Aurungabad, the capital of the ab trict, was, under its original name of G chief town of the viceroyalty of the Dec the residence of the emperor Aureng-ze viceroy: a circumstance to which it ow the province, its present name. It cont be the capital of a Mogul soubah. u Nizams withdrew their allegiance from t of Delhi; it was then for some years th of the Nizam's dominions. At present, t tal having been transferred to Hyderha rungabad is on the decline; but there is bazaar here for shawls and silks, and a f once the palace of Aureng-zebe. The tomb is also admired. It is distant from 186 miles, and 284 from Bombay. Lat. N., long. 76° 3′ E.

AUSA, a town of Tarraconensis, in th age called Ausona, now Vich de Ossona, of Catalonia in Spain.

I. See AUCH.
, a people of Gaul, the ancient inhabi-
CH. See AUGUSTA.
LTATOR, in ancient customs, a per-
ted in monasteries to hear the monks
ing, and to instruct them how to per-
re they were admitted to read or chant
the church.

FEN, a town in the circle of Suabia,
to the house of Austria. Long. 27° 16′
15′ N.

or AUSENSES, an ancient and very
ple of Libya. Herodotus tells us that
unacquainted with marriage, and had
omen in common. The children were
by their mothers till they were able
fter which they were introduced to an
of the men, who met every three
nd the man to whom any child first
nowledged himself its father. They
annually a feast in honor of Minerva,
e girls divided into two companies,
with sticks and stones; those who
ir wounds were concluded not to have
s.

UM, or AUXIMUM, an ancient Roman
he Picenum; now Osimo or Osmo, in

E, AISITÆ, or ÆSITÆ, a tribe of an-
s, supposed by Bochart to have in-
land of Uz mentioned in Job. See

RRY, 1. a district in the island of
consisting of four holms; 2. a small
belonging to the parish, and three
the island of Stronsay; and on which
e ruins of an old chapel, and of a
d the Monker, or Monk's house.

A, in ancient geography, a town of
s.

, a son of Ulysses and Calypso, from
Ausones are descended.

ES, or AUSONII, a people who an-
upied all the Lower Italy, from the
ium Circæum, down to the straits of
were afterwards reduced to a much
compass; viz. between the Montes
Massici: nor did they occupy the
s, but other people were intermixed.

IA, the ancient name of Italy, from
inhabitants the Ausones.

IUM MARE, in ancient geography, a
e Ionian sea, extending southwards
romontory Japygium, to Sicily, which
on the east, as it does the Brutii and
ecia on the south and east. It is
from the Tuscan sea by the straits of

IUS (Decius, or Decimus Magnus),
best poets of the fourth century, was
an eminent physician, and born at
. Great care was taken of his edu-
er because his genius was very pro-
that the scheme of his nativity, which
cast by his grandfather, made them
at he would rise to great honor. He
ncommon progress in classical learn-
age of thirty he was chosen to teach
at Bourdeaux; and afterwards promoted to be professor of rhetoric; in which office he acquired so great a reputation that he was sent for to be preceptor to Gratian, the emperor Valentinian's son. He was afterwards appointed consul, by his pupil Gratian, then emperor, A.D. 379; and besides the dignity of questor, to which he had been nominated by Valentinian, he was made prefect of the Prætorium in Italy and Gaul, after that prince's death. His speech, returning thanks to Gratian on his promotion to the consulship, is highly commended. He lived to a great age. The emperor Theodosius had a great esteem for him, and pressed him to publish his poems. There is a great inequality in his works, and in his style there is a harshness which was perhaps rather the defect of the times he lived in, than of his genius. According to Lempriere, he did not take proper time to correct his poems, but hurried them to publication, which may be the cause of many faults. One valuable performance, the Consular Fasti, is now lost. He is generally supposed to have been a Christian. The best edition of his poems is that of Amsterdam, in 1671. They were printed at Paris, with a French translation, in 1769.

AUSPEX, a name originally given to those who were afterwards denominated augurs. It is formed from avis, a bird, and inspicere, to inspect; auspices, q. d. avispices. Some will have auspices only to denote those who foretold future events from the flight of birds.

AUS'PICATE, *v.* & *adj.*
AUS'PICE,
AUS'PICY,
AUS'PICIOUS,
AUS'PICIOUSLY.

} Lat. *aruspex*, from *avis*, a bird, the obsolete *spicere*, to look; to take favorable omens from birds; but in a less formal and official manner than by augury. To foretel good fortune, prosperity, &c. Auspicious is synonymous with favorable, prosperous.

> Know thus far forth;
> By accident most strange, bountiful fortune
> (Now my dear lady) hath mine enemies
> Brought to this shore, and by my prescience
> I find my zenith doth depend upon
> A most *auspicious* star; whose influence
> If now I court not, but omit, my fortunes
> Will ever after droop. *Shakspeare. Tempest.*
>
> None of their kindred met; the knot they ty
> Silent; content with Brutus *auspicy*.
> *May's Lucan*, book ii.
>
> Thus were their loves *auspiciously* begun,
> And thus with secret care were carried on.
> *Dryden's Fables.*
>
> Skilled in the wing'd inhabitants of air,
> What *auspices* their notes and flight declare
> O! say—for all religious rites portend
> A happy voyage and a prosp'rous end. *Dryden.*
>
> But so may he live long, that town to sway,
> Which by his *auspice* they will nobler make,
> As he will hatch their ashes by his stay. *Id.*

AUSPICIUM, AUSPICY, the same with AUGURY. Servius, indeed, distinguishes between auspicy and augury; making auspicy comprehend the consideration of all things; augury only of certain things.

AUSPITZ, a town of Moravia, in the circle of Brunn, belonging to the prince of Lichtenstein. Here are held large cattle markets which are attended by a number of graziers from Hungary. Population 2215. Forty-two miles S.S.W. of Olmutz.

AUSTER, one of the four cardinal winds, as Servius calls them, blowing from the south.

AUSTE'RE,
Auste'rely,
Austere'ness,
Auster'ity.
} Lat. *austerus*; from *αυω*, I dry; because harsh tastes dry the palate. Harsh, disagreeable to the moral taste, rigorous, severe.

> My unsoil'd name, th' *austereness* of my life,
> May vouch against you; and my place i' th' state
> Will so your accusation overweigh. *Shakspeare.*
>
> Now, Marcus Cato, our new consul's spy,
> What is your sour *austerity* sent t' explore?
> *Ben Jonson.*
>
> What was that snaky-headed Gorgon shield
> That wise Minerva wore, unconquer'd virgin,
> Wherewith she freez'd her foes to congeal'd stone,
> But rigid looks of chaste *austerity*,
> And noble grace, that dash'd brute violence
> With sudden adoration and blank awe? *Milton.*
>
> Th' *austere* and pond'rous juices they sublime
> Make them ascend the porous soil, and climb
> The orange tree, the citron, and the lime.
> *Blackmore.*
>
> Compos'd in gait,
> *Austerely* grave and thoughtful, on his shield
> The democratic majesty he bore
> Of Athens. *Glover's Leonidas*, book vii.

Austere implies also rough or astringent. Thus an austere taste is such a one as constringes the mouth or tongue; as that of unripe fruits, harsh wines, vitriol, alum, &c. Austere substances, says Mr. Chalmers, differ from acerb ones, in that they constringe the mouth and tongue less, and are void of acidity.

AUSTERLITZ, or Slawkow, a small town of Moravia, in the circle of Brunn, twelve miles east of Brunn, belonging to the prince of Kaunitz Rielberg. Population about 1620. This town will be long memorable in history for the great battle fought near it on the 2d of December, 1805, the anniversary of Buonaparte's coronation, between the French under him, and the united forces of Austria and Russia, under their respective emperors. The armies it appears were nearly equal, being about 70,000 men each. Buonaparte, by feigning a retreat, drew the allies to a spot which he had selected for giving battle; and he bivouacked on the field, after having spent most of the night in giving orders. The battle commenced with the dawning light. After a cannonade of several hours the allied right and centre were routed; and their left, which had been more successful in the outset, was compelled to give way. The defeat was signal; but the approach of night prevented pursuit; the state of the roads compelled the allies to abandon most of their artillery, and forty standards; all the baggage and ammunition of the allies, and 120 pieces of cannon, remained in the hands of the French. The French are supposed to have lost 13,000 men in killed and wounded; and the Austro-Russians three times the number. It is certain that so many wounded were left on the field by the allies, that they could not all be dressed until two days after the battle. Near this place an interview immediately took place between the emperor of Austria and Buonaparte, in a mill, and the preliminaries of an humiliating peace were agreed to. But the emperor Alexander refused to become a party to it, and succeeded, though under every difficulty, in effecting his retreat homeward.

AUSTIN (William), an English author, was a barrister of Lincoln's Inn. He wrote a book entitled Hæc Homo, or the Excellency of Women, 12mo.; in which he seems to have borrowed very freely from Agrippa's De Nobilitate at Præcellentia Fœminei Sexus. He wrote also Meditations on the principal Fasts and Feasts of the Church, which were published in folio, 1637, after his death.

Austin (St.) See Augustine, St.

AUSTRALASIA, or Australia, is a new and fifth great division of the globe, originally suggested by a learned foreigner, M. le President de Brosses of Paris; but whose principal parts have been explored by Englishmen, and which has been colonised solely from this country. It comprehends a tract of ocean, bounded on the north by the equator, east by a line drawn on the 186th degree of east longitude, to the 55th degree of south latitude, south by the 55th parallel, and west by a line drawn from the north-west Cape of Hapau, on the east of the islands of Mysol, Timorlaut and Ceram, to the 65th degree of east longitude on the 55th parallel; making an irregular four-sided figure, extending upwards of 5000 miles in average breadth from east to west, and about 3200 miles from north to south.

Australasia is, therefore, a maritime division of the globe, in distinction from the older terrene divisions of Europe, Asia, Africa, and America; it is altogether, a classification of islands, having no one continent of this name, including, as the other divisions of the world, various kingdoms circumscribed by one shore; so far it is an anomaly in geographical classification. 'But in this immense extent of regions, which are to form the object of researches about to be detailed,' says M. de Brosses (Histoire des Navigations aux Terres Australes), 'how numerous are the different countries, climates, manners, and races of mankind! The sight would be dazzled and confounded if care were not taken to relieve it, and fix its attention, by divisions marked from distance to distance.' On these grounds he proposed, together with a classification of the islands of the Pacific, under the name of Polynesia, to include New Holland, New Guinea, New Zealand, and the islands in their neighbourhood, under the collective name of Australasia, an arrangement that has been latterly adopted by most respectable writers. Some have preferred the term Australia, as more consonant to the primitive appellation, Terra Australis, or Southern Land.

The progress of the discovery of this immense region may be correctly united, with the common features of its various parts, under this collective article. The history of particular settlements will be found under Botany Bay, New Holland, Norfolk Island, Van Diemen's Land, &c. in their alphabetical positions in our work. We present the reader with a Chronological Table of the discovery of the islands of Australasia

A Chronological Table of the discovery of the Islands of Australasia.

NAME.	WHEN DISCOVERED.	BY WHOM.	INHABITANTS.
1. **Papua or New Guinea.**	1526.	The Portuguese, under D. Jorge de Meneses.	Black Negroes; much resembling those of Guinea.
2. **New Holland,**	Supposed to be uncertain—Marked in a Map in the British Museum in 1542; first authentic account of its being visited, dated 1606.	The Dutch, in the Duyxen yacht. About the same time the Spaniards visited it under Torres, and F. de Quiros.	Ditto; a remarkably barbarous race;—'all of them of the most unpleasant look, and the worst features of any people I ever saw, though I have seen a great variety of savages,' says Dampier.
3. **Solomon's Islands.** Of which the principal are— **Buonavista,** **Florida,** **Galera,** **Guadalcanar,** **Santa Ysabel,** **San Christoval,** **San Catarina,** **Santa Ana,**	1567.	The Spaniards, under Alonso de Mandana. Not again visited until by Carteret, in 1767.	Inhabitants, cannibals.—Many of the islands very fertile. Extend from S. lat. 5° to 11°, E. long. 155° to 162° 30′.
4. **New Hebrides,** According to Cook, **Tierra des Espiritu Santo,** **St. Bartholemew,** **Mallicola,** **Isle of Lepers,** **Aurora,** **Whitsuntide,** **Antrym,** **Apee,** **Paoom,** **Three Hills,** **Sandwich,** **Montagu,** **Hichinbrook,** **Shepherd's Isles,** **Erromango,** **Tanna,** **Inner,** **Annatom,** **Erronan,**	1606.	The Spaniards, under F. de Quiros, and L. V. de Torres.—Explored by Captain Cook in 1774, who gave them their present name.	Inhabitants, more civilised, at Tanna the negro character disappears. The country very fruitful and agreeable; and, in some of them laid out in well fenced plantations. The Terra del Espiritu Santo, the principal of the group, lies in S. lat, 14° 30′, E. long. 167° 30′.
5. **New Britain, New Ireland, &c.; a group not fully ascertained. To the N.W. are the Admiralty Isles.**	1616.	The Spaniards, under Le Maire and Schouten.	Inhabitants of New Britain and Ireland black negroes. Inhabitants of the Admiralty Isles of a lighter color, and approaching the Malay character. All the islands fertile and well watered: lying in a crescent, whose centre lies in S. lat. 50°, E. long. 150°.
6. **Van Diemen's Land.**	1642—as an island in 1798.	The Dutch, under Abel Jansen Tasman.—The British, Capt. Flinders and Mr. Bass.	A similar race. Called after the Dutch governor of the East Indies, Anthony Van Diemen.
7. **New Zealand, having to the east Chatham Island.**	1642. Chatham island in 1791.	The Dutch, under Abel J. Tasman.—By Mr. Broughton when with Vancouver.	Inhabitants remarkably strong, active, and barbarous. Have at the same time singular traces of civilisation amongst them.

A Chronological Table of the Discovery of the Islands of Australasia—contin

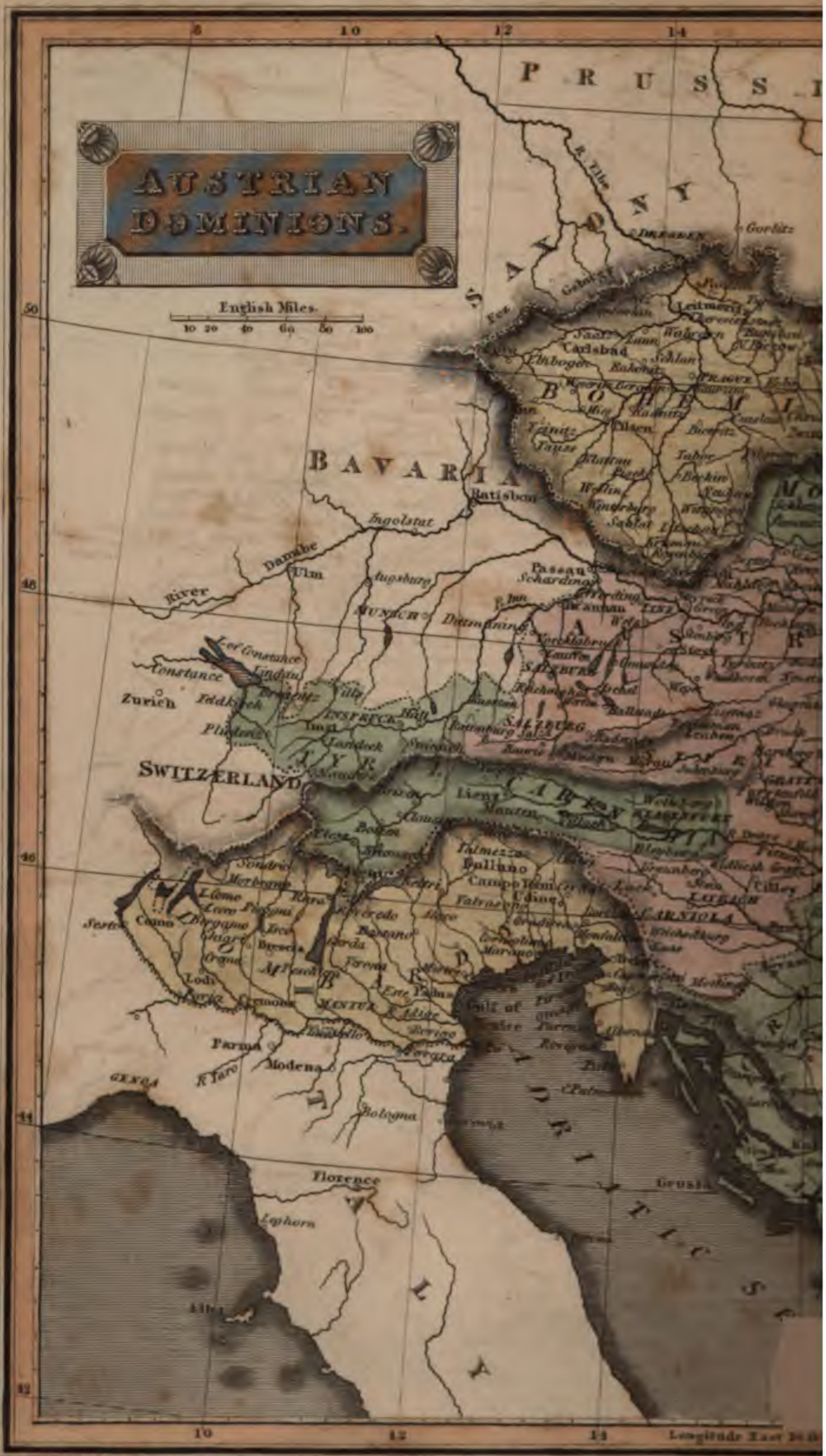
NAME.	WHEN DISCOVERED.	BY WHOM.	INHABITAN
8. St. Paul and Amsterdam	1696.	The Dutch, under Vlaming.	Uninhabited. Am volcanic producti the crater of an volcano, scarcely abounding with springs. Seals ar the shore in large
9. Kerguelen's Land, or Island of Desolation	1772.	The French under M. de Kerguelen.	Uninhabited and bar
10. New Caledonia.	1774.	The British, under Capt. Cook.	Inhabitants, affable, of light complex country comparati occasionally laid o tations.

We have thus exhibited the leading features of this extensive division of the globe, in the order in which they became known to Europe; but must not omit to notice the coral reefs and islets with which the Australasian seas abound. These are seen in every league of sea, and according to Dalrymple, in 'all stages' of their formation. Capt. Flinders, who was wrecked on one of them, conjectures, 'that when the animalculæ, which form the coral at the bottom of the ocean, cease to live, their structures adhere to each other, by virtue either of the glutinous remains within, or of some property in salt water; and the interstices being gradually filled up with sand and broken pieces of coral washed by the sea, which also adhere, a mass of rock is at length formed. Future races of these animalculæ erect their habitations upon the rising bank, and die in their turn, to increase, but principally to elevate, this monument of their wonderful labors.' It is pretty well authenticated that these submarine laborers uniformly build the outer part of their erection perpendicularly from the very bottom of the deepest seas. As it rises to the surface, and out of the water, salt plants, vegetable matter of various descriptions, floating wreck and other accumulations attach themselves to it; 'we had wheat-sheafs, mushrooms, stag's horns, cabbage-leaves, and a variety of other forms, glowing under water,' says Capt. Flinders, 'with vivid tints of every shade betwixt green, purple, brown, and white.' The dung of birds and the various seeds and other food they occasionally scatter, are fruitful sources of the growth of these extraordinary productions of the deep; some are seen considerably below the water, others just appearing above its surface; some as barren rocks with no indications of soil; others with a thin layer of earth, or a few weeds on the highest part; and others, again, well clothed with soil and even with timber. The recent navigator of these seas, whom we have quoted, describes himself as having to seek fourteen days, and sail upwards of 500 miles amongst that range of these reefs and islets which environs the eastern coast of New Holland, before he could find a passage through them to the open sea.

In no part of the globe can grea
of barrenness and fertility occur
various islands comprehended in
On the shores of New Holland, it
minent feature, we find fruitful pl
with verdure eastward, and on th
south-western coast nothing but n
of sand; 'so uniform,' says M. D'E
'that the most fruitful imagination
nothing to say of it.' This islan
such it is to be called, almost eq
the whole of continental Europe,
itself an unequalled and almost un
for geological enquiry; the outline o
coast is not filled up; and some re
into the interior, from our colony o
shore, have disclosed an extensive
promising lands, watered by some
within 140 miles of Sidney, as are
part of the world. See NEW HOL

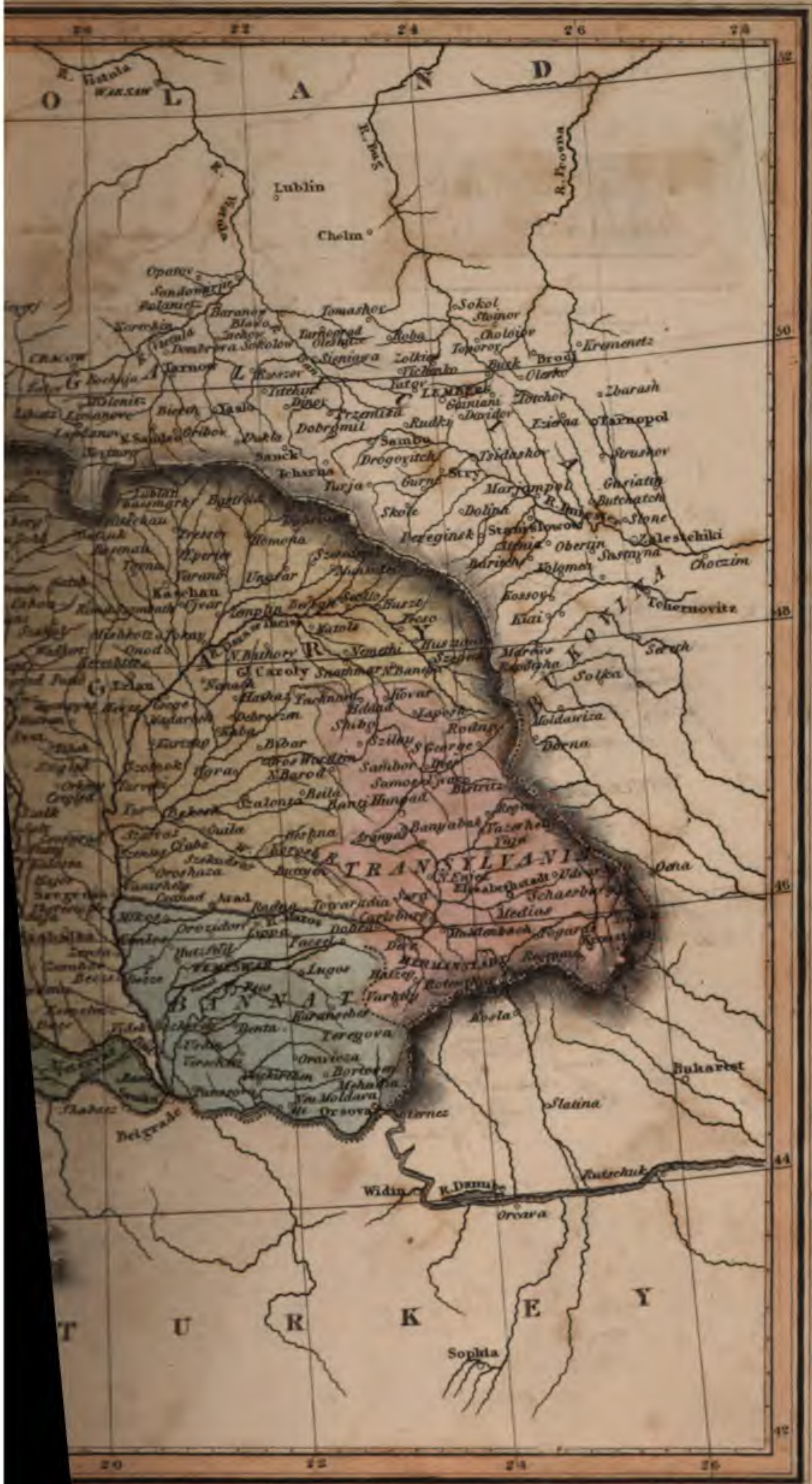
The natives of Australasia are
part, of a decisively African or neg
and nowhere is human nature foun
degraded state. An enormous hea
tenance, and long, slender extre
their physical conformation, toget
acuteness of sight and hearing; bu
starved, their strength is generally
of the inhabitants of other climes.
of these seas is the population grea
than 20,000 inhabitants have be
all the coasts of these islands tak
Of natural affections, little, of cou
and of religion, absolutely nothin
have scarcely the regard of the br
for their offspring. They will comm
abortion by violent means; and som
the horrible expedient of burying th
alive, to be freed of the trouble of
inhabitant of New Holland knock
woman of his choice with a club,
sence of her friends, and takes h
woods, while in a state of insensi
the alliance is preserved as long a
convenient; he then deserts her for
who is similarly obtained.

No quadrupeds larger than the
found here, and none whatever in



Drawn by J.Assheton

London, Publ



Engraved on Steel by J.Shury.

lands. This animal was first described by aptain Cook, who found it while with a shooting arty on the coast of New South Wales in 1770. is peculiar to this part of the world, but has en found to breed well in England. There is so a small animal peculiar to Australasia, alled the wombat, of the bear tribe, but re- arkably tame. The most extraordinary animal, owever, of this, or perhaps of any other region, the ornithoryneus paradoxus, or duck-bill; a uadruped with the beak of a duck. Dr. Shaw as so astonished at this apparent mixture of bird nd quadruped in its formation, that when the rst specimen was exhibited to him at the Bri- ish Museum, he suspected it to be an attempt t imposition. 'Nor is it without a minute ex- mination,' says this distinguished naturalist, that we can persuade ourselves of its being the enuine snout of a quadruped. The body is de- ressed, and has some resemblance to that of an tter in miniature; it is covered with a very hick sort of beaver, like fur, and is of a mo- erately dark brown color above, and of a sub- erruginous white beneath, with some variety as o intensity of color in different animals. The ead is flattish, and rather small than large; the ail flat, furry, like the body, rather short and ob- use, with an almost bifid termination; it is broad at the base, and gradually lessens to the tip. The general length of the animal, from the tip of the eak to the end of the tail, seems to be from thirteen or fourteen, to eighteen inches. The legs are very short, terminating in a broad web, and claws which on the fore feet are five in number, straight, strong, and pointed; but on the hind feet in the male, are six claws, the sixth or interior one being seated much higher up than the rest, and resembling a long sharp spur.' Dr. Shaw first described this animal in his Naturalist's Miscellany, under the title of Platypus animus.

Numerous tribes of beautiful birds are seen ere. The bird of Paradise, so long spoken of n Europe as wanting feet; paraquets, cocka- oos, a singular species of cassowary, and black swan. Immense whales, seals, and dol- hins, crowd upon the shores, where a large ttle fish is sometimes seen, having the ap- earance of a cask upon the water, and stretching t its tentecula to the length of seven or eight et. The tribe of molluscas is also singularly ch. One species of marine fucus has been nd to reach from the bottom of the sea to the face, on a stem from 250 to 300 feet in length. The botany of this region is as curious and el as any other of its features. Mr. Brown, who accompanied Captain Flinders, and who had the magnificent botanical collections of Sir Joseph Banks under his charge, has arranged a Flora Terræ Australis, containing 4,200 species referable to 120 natural orders, eleven of those orders containing about half the species. In Van Dieman's Land, the gum-tree (of which 100 different species are found) not unfrequently attains the height of 150 feet, with a girth near the base of from twenty-five to forty feet. The gum of this tree is medicinal, and that of one species makes very good pitch. It also furnishes, together with the sasuarina, excellent timber for ship-building, agricultural implements, or domestic furniture.

There can be no question that the supposed existence of an immense continent in the Southern Ocean first invited the navigators of the sixteenth and seventeenth centuries to explore these important islands; nor was the idea of its existence wholly abandoned until the discoveries of Captain Cook. The name of Terra Australis Incognita was given to this feature of science; and upon no point were geographers more agreed than respecting its existence, although its limits were variously defined. Even in the year 1770, 'the great southern continent' was declared by Mr. Dalrymple, in his Historical Collections, to be no longer a matter 'for discovery;' that 'it extended from 30° south, to the pole; and that the number of its inhabitants was probably more than 50,000,000;' while 'the countries intermediate' between the east and west points, 'equal in extent all the civilised part of Asia, from Turkey to China inclusive.' Thus the supposed extension of the East Indies round to the west, allured Columbus to the arduous enterprize that resulted in the discovery of the western world; and thus some harmless errors, pursued with humility, are kindly allowed by providence to lead us to truth.

AUSTRALIS CORONA. See CORONA AUSTRALIS.

AUSTRALIS PISCES, the Southern Fish, is a constellation of the southern hemisphere, not visible in our latitude: whose stars, in Ptolemy's catalogue, are eighteen, and in the Britannic catalogue, twenty-four.

AUSTRALIZE. From *auster*, the south. To point towards the south.

> Steel and good iron discover a verticity, or polar faculty; whereby they do septentriate at one extreme, and *australize* at another. *Brown's Vulgar Errours.*

AUSTRASIA, the ancient name of, 1. Lorraine, in France; and, 2. of Westrick, in Germany.

AUSTRIA.

USTRIA, in geography, a country of Ger- ny, the Upper Pannonia of the ancients, de- ng its modern name from the French and an pronounciation of Œsterich; in High Ger- , Œsterreich; a name which signifies the ern kingdom, alluding to the geographical ition of the province with respect to the more tern parts of Germany, and which was inally applied to the circle of Austria, the imonial possession of the first grand dukes.

The CIRCLE OF AUSTRIA is the largest of the ten circles or divisions of the German empire, bounded on the east by Hungary, south by Italy and Croatia, west by Switzerland, and north by Suabia, Bohemia, and Moravia. It comprehends Austria Proper, Styria, Carinthia, and Carniola dutchies, the country of Tyrol, the principalities of Brixen and Trent, part of Friuli and the Littor ale, Voralberg, certain districts in Suabia, and several domains belonging to the

Teutonic order; together with Saltzburg and part of Passau, which have been added since 1802. Of this extensive circle, the four general divisions of Upper Lower, Anterior, and Interior Austria have been formed, corresponding with their administration by the chancery at Vienna; the whole including an area of 29,940 square miles, and a population of nearly 5,000,000.

The ARCHDUCHY OF AUSTRIA, otherwise called Austria Proper, or the Hereditary States of the house of Austria, forms the upper and lower divisions of this circle, into which it is divided by the flowing of the river Ens. It is bounded on the north by Bohemia and Moravia, on the east by Hungary, on the south by Styria, and on the west by Saltzburg and Bavaria, comprehending an area of 15,392 square miles, and a population of nearly two millions of inhabitants. Of the two divisions of this archduchy, Lower Austria is the most important, containing, on a surface of 7788 square miles, thirty-eight cities, 241 towns, 4327 villages; and by the last census, 1,100,000 inhabitants. It is made to consist of four subordinate divisions, lying upon the two opposite banks of the Danube. On the south bank the quarter 'above the forest of Vienna,' and 'the quarter below the forest of Vienna.' On the north bank the quarter 'above the Mannhartsberg,' and 'the quarter below Mannhartsberg.'. Upper Austria, containing an area of 5104 square miles, and including fourteen cities, ninety-two towns, 6411 villages; and, according to the late census, 629,945 population; is also divided into four subordinate territories, those of the Traun, Hansruck, and Inn, on the south bank of the Danube, and that of Muhl on the north. The archdukes of Austria were originally exempt from the jurisdiction of the high courts of the empire, took precedency of princes of the blood, and had the power of creating counts, barons, and other nobility. According to the Pragmatic sanction of 1713, the succession to this archduchy is hereditary, females not excluded. The revenue is about 24,000,000 florins, 20,000,000 of which are contributed by the country below the Ens. The states, however, assemble but seldom, and have but a very contracted influence in the management of national concerns.

The EMPIRE OF AUSTRIA, besides the provinces of the same name, including the archduchy and other territories described above, comprehends many ancient kingdoms and states which were originally independent. It is situated in the middle of eastern Europe, and is bounded by Piedmont, Switzerland, and Bavaria, on the west; Bavaria, Silesia, and Poland on the north; Russia, Moldavia, and Wallachia, on the east; Turkey, the Adriatic, and Middle Italy on the south. The northern part of the empire stretches into Bohemia, and the southern into the territory of Cattaro, in the region of Dalmatia. It has received several augmentations of territory at different periods, and includes a number of nations, all differing in their lineage, customs, languages, and habits, but forming one solid and compact political body, and subsisting at present under one general name.

The following table presents a view of its great component parts, as settled by the last peace, or in 1816:—

COUNTRIES.	Square Miles.	Inhabitants.	Computed Revenue in Sterling Money.
Circle of Austria	45,760	4,222,700	£4,000,000
Saltzburg, Berchtolsgade, and Passau	4,378	255,000	140,000
Bohemia	20,900	3,112,000	2,000,000
Moravia	10,296	1,364,000	700,000
Austrian Silesia	1,826	286,000	150,000
Galicia, with the Bukowine	53,400	4,934,000	1,600,000
Hungary, including Transylvania, Sclavonia, and Austrian Croatia	130,920	9,400,000	1,800,000
Venetian territories, including Istria	15,136	2,894,000	1,500,000
Dalmatia, with Cattaro, Ragusa, and the islands	8,052		
Lombardy, viz. the territories of Milan and Mantua	4,400	1,350,000	400,000
Lordships of Valteline, Bormio, and Chiavenne.	1,320	108,700	20,000
Total in round numbers	300,000	28,000,000	12,000,000

In 1818, Mr. Lichtenstern states the extent of the empire, exclusively of the dependent states, at 250,000 square English miles; and the population at 28,207,882.

The natural features of Austria are very magnificent; the southern parts highly romantic: the scenes and landscapes of Carinthia, Carniola, and Dalmatia, have long been celebrated as some of the most perfect in the Alpine regions; whilst detached hills and chains of mountains bulge in irregular figures all over the northern districts, uniting themselves with the great Carpathian chain, the natural boundary of Hungary and Transylvania. But the Tyrol stands pre- nent for its rich variety of picturesque scen Bold mountains and defiles, lakes and glaci cataracts and cascades, rivers, woods, and leys, shaded with great beauty, bestowed in the different grounds of the picture, irregularly grouped and brought, unite in the same sweep of prospect, and overwhelm the mind of the spectator with unutterable emotions.

The highest mountains belong to the central part of the empire; namely, to Styria, Carinthia, and Carniola, where they frequently reach the height of 4000 feet. The snowy mountain, in the hereditary states, is of vast altitude, and may be seen from the ramparts of Vienna every clear day. The elevated ramifications of the Alps and Carpathian mountains, with the circular barrier of Bohemia and other ranges, spread themselves over very extensive regions of the Austrian empire, and under various names and forms stretch from the borders of Switzerland to the confines of Russia.

The interior of Austria is intersected by noble rivers. The Danube is altogether, perhaps, the most rapid and majestic. This river, winding its course from the north-west to the south-east, divides the whole empire into two distinct parts. It receives into its bosom upwards of forty tributary streams before it enters the Austrian dominions, and afterwards an accession of one hundred more before it enters the Euxine Sea. The rivers that empty themselves into this grand emporium of waters are many of them of considerable magnitude, and chiefly take their rise in the mountains already enumerated. The Thesis originates in the eastern part of the Carpathian range, and is at first a fine, clear, and rapid stream. It flows four degrees east longitude, and then turning south, crosses Hungary, receiving the Maros, Koros, and other tributary accessions, and enters the Danube near the city of Belgrade. The river Save is formed by numerous mountain torrents descending from the summits of Tyrol. It flows along the southern border of the Austrian dominions, and enters the Danube a little below the Thesis. The Drave originates in the streams and cataracts of the mountains of Carinthia, and receives the Muhr at Legrad, which conveys the waters from the northern summits of Styria. Crossing these two beautiful provinces, and forming the separating boundary between Croatia and Hungary, it falls into the Danube below Esseck. The Inn, rising in the elevated regions of the Swiss Alps, and descending to the north-east through the kingdom of Bavaria, forms the western boundary of the empire, and enters the Danube at Passau. The Raab and Leytha rise in the western parts of Hungary, and fall into the Save; the former near Komora, and the latter at Presburg. The Morava, or March, from which Moravia derives its name, descends from the northern extremity of that province, and proceeding south, falls into the Danube west of Presburg. The Mulda rises in the southern regions of Bohemia, and taking a northerly direction, flows into the Elbe. The southern parts of Austria are watered by numerous important streams and rivers, which originate in the chain of mountains that encircles the north of Italy, are cherished by the overflowings of those lakes that lie upon its bosom, and are poured over the summits of that lofty range in falling torrents and beautiful cascades. The Adige and the Po will be described in our view of Italy. The Piave rises in the overflowings of the sub-alpine lakes, and descends through the territory of Brixen and the province of Treviso, into the Gulf of Venice. The Tesino rises in St. Gothard mountain, and forms the south-western boundary of the Austrian territory, flowing through the country of Grissons, the lake of Maggiore, and the Milanese territory; it washes the walls of Pavia, and falls into the Po. The Adda rises in Mount Braulis in the country of the Grissons, and after flowing through the valley of Valteline, falls into the lake of Como, and re-issuing from the south-east arm of that basin, enters the Po near Cremona. The Oglio rises in the Val Camonica, and bending to the south, flows through Venice and lake Isero to the duchy of Milan, and then winding south-east, crosses the duchy of Mantua, and falls into the Po a few miles east of the Adda. The greater part of the Austrian rivers are too rapid, and too much impeded by rocks and waterfalls, to admit of any extensive navigation; much, however, has been effected by canals, and plans of the most gigantic kind have been formed for connecting the great rivers with each other, and thus opening a communication between the interior of Austria and all the maritime kingdoms of Europe.

The lakes of Austria are numerous, but are inferior to those of Russia and Switzerland. They chiefly lie upon the tops of mountains, or pent up within the valleys and intersections formed by the bold ridges which characterise the scenery. Those on the south side of the great Alpine range are considered among the grandest specimens of picturesque beauty found in Europe. They form the distinguishing features of the landscape, and furnish that delightful charm which so bewilders and astonishes the traveller. The chief are Maggiore, or Lucarno, Lugano, Como, Lecca, Iseo, and Garda. Maggiore is, from its situation and figure, regarded as the most beautiful. It lies embosomed in hills, adorned with orchards, nurseries, and vineyards, and has its summit shaded with dark thick forests of chestnut-trees. The banks are spotted with covered avenues in trellis-work, and are laid with numerous small sheets of water, while the lake itself presents a clear greenish surface, broken by beautiful islands of different figures and dimensions, embellished with numerous temples and gardens. Lake Como is almost equally delightful. It lies among mountain scenery perfectly romantic, and is celebrated for an intermitting spring near Tarno and the ancient Caves of Verena. The lake Lago di Garda is diversified with small islands, capes, promontories, and peninsulas, and lies sunk in hills richly adorned with vines, lemon, orange, olive, and other fruit-trees. On a peninsula of that lake lies the ancient ruins of Sirmis, so highly celebrated by Catullus. The small, but beautiful Iseo, is less than the other lakes, but lies amid the same alpine summits, and participates of the same delightful scenery.

The climate of Austria is various, and in general salubrious, except in the neighbourhood of the plains and marshes where the miasma often proves fatal. In the southern regions it is warm, and produces the wines and fruits commonly found in the upper regions of Italy; but in the northern parts, comprising Gallicia, part of Hungary, Bohemia, and Moravia, with the whole of Austrian Silesia, the cold is often severe.

The soil of Austria is also various, including almost every species from the most barren to the most fertile. Sandy plains are frequently found, in which nothing can grow; whilst the banks of the Po and Danube are, in point of luxuriance, scarcely to be equalled. Of the land of Austria not less than 24,000,000 joch, each about an English acre and a half, is occupied by forests. These are in general of the finest timber and of the greatest importance to the empire. That of Belevar in Hungary, situated on the Drave, consists for the most part of different species of oak trees, thousands of which, at a considerable distance above the root, are seven feet in diameter, and continue nearly the same size to the height of thirty, forty, and even fifty feet, without throwing out a single branch. But though Austria is wholly, from its situation, an agricultural empire, that science is imperfectly understood; and the late improvements are scarcely known. Even endeavours for the more extensive promotion of agriculture have been unsuccessful, owing to the want of a better mode of tenure and a better understanding between the cultivators and the proprietors. The productions of some parts of the empire are nevertheless numerous and excellent, embracing all that can administer to the necessaries and even luxuries of life. Austria Proper yields corn, wine, and fruits. Bohemia pulse, grain, hops, &c. Hungary produces millet, maize, and rice. The valleys of Carniola produce oil and excellent wine, with fruits, millet, and flax; while the sub-alpine regions yield all the productions of southern climes, abounding in oranges, lemons, vines, peaches, figs, and tobacco. From a recent calculation by M. Blumenbach, it appears that the present quantity of arable land in Austria is about 43,582,000 acres; of which, allowing one-third for fallow, there remains 29,054,700 productive acres; and of grain alone the annual produce has been calculated at 360,000,000 Winchester bushels, or about 12·4 for every acre. The land in Austria devoted to the cultivation of wine is about 2,324,660 acres, and the produce about 493,109,565 gallons, being about 212 gallons per acre; besides which, the vineyards of Smyrmiam alone yield 70,000 eimers of spirit, distilled from the grapes, after the wine has been drawn from them, each eimer equal to fifteen English gallons; and the same spirit is produced in the other provinces in equal proportion. The whole value of the vegetable production of his imperial majesty's dominions has been estimated at the annual sum of £68,500,000 sterling, and the waste lands have been calculated at 25,271 English square miles.

The domestic animals are chiefly horses, cattle, buffaloes, sheep, swine, &c. Efforts have been made to improve the breed of horses, by the introduction of the Arabian and other species amongst them, which have been commonly successful. The emperor established a breeding-stud at Mezőhegyes in Hungary, about the year 1783. It occupies four commons, containing 63,000 English acres, employs 500 men, and furnishes the army alone with 1000 horses annually. Attention has likewise been paid to the improvement of sheep, and of the wool imported to England, as Saxon, a great part is the produce of the Hungarian flocks. The cattle are mostly of a bluish slate-color; they feed chiefly in the forests, where they are protected from the heat of the sun, and are a considerable source of wealth to the inhabitants. The chief wild animals of Austria are those common on the European continent, consisting chiefly of wolves, boars, lynxes, &c. The chamois and the marmot are common.

Of the feathered tribes may be enumerated bustards and pelicans, and some species of the falcon. A few birds are also found upon the mountains of Carniola, which are peculiar.

The mineral riches of Austria are considerable, and are more varied and important than those of most other states in Europe. Near Kremnitz, in Hungary, are mines of gold and silver. Silver mines are also found in Chemnitz, about twenty miles south of the latter. Schmelnitz and Herrengund contain valuable mines of copper. Antimony, coal, salt, and alum are also found in different parts of the empire. The opal is a mineral peculiar to Hungary, and as a gem is held in high estimation throughout the east. It is found in the mines of Kzerweriza, east of Kremnitz, in all states and qualities, from the semi-opal to the finest and most valuable. Gold ore is obtained of several kinds. The gray gold ore is found in the Najiag, north-east of Deva, and is peculiarly rich. The white gold ore is found a few leagues north of Karlsburg. To the west of the same town are mines of the same metal, in the vicinity of Zalantha. To the north of the province are those of Kapnich, and in the southern parts fresh gold mines are also said to have been recently discovered. Bohemia contains ancient mines of gold, silver, copper, and lead, in which are found perhaps the finest garnets in the world. Styria produces the finest steel; and mercury is said to be found in many parts of the empire. The Austrian mines altogether employ more than 35,000 persons, and the annual produce has been calculated at 2100 marks of gold, 93,000 of silver, 62,000 centvers of copper, 44,000 of iron, and 23,000 of lead. Excellent marble, and also mineral springs, are common in many parts of Austria.

Vienna, the capital, and centre of its commerce, lies near the site of the ancient Vindobona, towards the eastern confines of Germany, on a plain where the Vien falls into the Danube. The whole city approaches to the figure of a cone, of which the apex is formed by St. Stephen's church, and the circumference by the basis of the external lines of the fortification. The church of St. Stephen is the chief ornament of the city: it has a beautiful spire covered with fretwork, and a roof distinguished by the finest Mosaic tiling. This edifice is closely connected with the history of Austria; and their chief princes, heroes, and sages, sleep within its walls. The church of the

Augustines, and the imperial palaces, attract considerable attention.

Prague is the second city in Austria, and the capital of Bohemia, containing 80,000 inhabitants. It derives its name from a bridge which crosses the Mulda, 1800 feet long and thirty-five broad; on the battlements of which are thirty-two statues of saints, and at each end a high gothic tower of exquisite architecture. Its buildings and gardens are fine and numerous, although the former are many of them in ruins. Its university, which was founded by Charles IV. in 1347, was long considered as the great depository of German literature, and attended by 40,000 students, but now can scarcely boast the attendance of 400 ragged boys. The other chief towns of Austria are Presburgh, the capital of Hungary; Lemberg, the capital of Galicia or Austrian Poland; Gratz, the capital of Styria; Venice, the capital of the Venetian territories; Olmutz, the ancient capital of Moravia; Milan, the capital of the late kingdom of Italy; Mantua, the capital of the Mantuan territories; Trent, Brescia, Pavia, Padua, Verona, Trieste, Lintz, Saltzburgh, Troppau, Clausenburgh, Carlstadt, Hermannstadt, Toeplitz, and Œdenburg, Schemnitz, and Kremnitz, in the mining districts; Brunn, the modern capital of Moravia and Debretzin; Pesh, the Transacincum of the Romans; and Buda, sometimes called Offen-Buda, the last two contiguous to each other, and only separated by the Danube. They are often regarded as one city, and considered by many geographers as the capital of Hungary. There are several other considerable towns, though of inferior importance.

The chief manufactures of Austria are cotton, thread, linen, lace, silks, stuffs, stockings, spirituous liquors, brass, iron, and steel; agricultural and kitchen utensils, glass, porcelain, and earthenware. The manufacture of some of these is confined to particular districts; cotton is manufactured chiefly in Austria Proper, where the British machinery and improvements have been introduced, and no fewer than 360,000 persons are constantly employed. Linen is manufactured chiefly in Bohemia and Moravia, although some of the finest qualities are obtained from Austrian Silesia, where upwards of 80,000 pieces are produced annually. The iron forges of Austria are about 1000, and are chiefly in Bohemia, in the country near the Enns, and in Styria. The last of these contains 200 of them, and produces 17,000 tons of wrought iron and steel annually. The steel ware of Carlsbadt is in high repute in many parts of Europe. Glass and porcelain manufactures are carried to a considerable extent in several parts of the empire; of the former there are no fewer than 170 works; nearly one half of which are in Bohemia, where magnificent services and beautiful highly finished lustres are made. Plate glass is carried to great perfection at Neuhaus. Leather, gunpowder, tobacco, sugar, and cinnamon, receive considerable attention in several districts; and the jewellers of Vienna are much renowned for polishing precious stones.

From a jealousy of foreign manufactures there is no great fair held in the Austrian states, except at Botzen, on the Italian frontier; but several markets have been instituted for the interchange of domestic commodities. The rivers of Austria in some parts, greatly facilitate and improve the inland trade, whilst the great commercial roads afford the means of supplying even the secluded inhabitants of the Alps with all the comforts and conveniences of life. The chief imports of Austria consist of the raw materials, as wool, cotton, raw silk, drugs, oil, rice, and spices, received chiefly from the Levant. They export their own manufactures. Austrian consuls have been placed about the Levant and other parts of the Mediterranean, under the protection of Trieste and Constantinople, for the advantage of commerce; and the Greek merchants, who trade with them, are obliged, as a security to the state, to have a certain proportion of visible property in the empire.

The established religion of Austria is the catholic, but since the time of Joseph II. full toleration has been granted to all religious professions; and in Hungary, Transylvania, and Sclavonia, members of the Protestant and Greek churches are numerous, and are settled in the enjoyment of considerable privileges. The ecclesiastical establishment has nine archbishops, viz. those of Vienna, Gran, Kolocza, Prague, Lemberg, or Leopold, Olmutz, Layback, Udina, and Milan. Under these there are above thirty Catholic bishops, and six of the united Greek church. The archbishop of the pure Greek church has his seat at Carlowitz, in the eastern part of Sclavonia, and has nine suffragans under him. The archbishop of Gran is the metropolitan of Hungary, and by virtue of his office is lord lieutenant, primate, and chancellor of the kingdom. He has power to create nobility within his own archi-episcopal dominions, and possesses an annual revenue of £36,000 sterling. The emperor is considered as the head of the church, and in Hungary is considered as pope. He appoints bishops, regulates their incomes, establishes or suppresses monasteries at his pleasure, and frequently applies their revenues to other purposes.

In point of literature Austria is, at present, greatly behind the other provinces of Germany, owing to the unpolished state of the languages; their want of connexion with the more refined and classical tongues of Europe, together with the restrictions of government. The influence of bigotry, too, has often blasted the bud of genius, and neutralized every effort to promote its developement and perfection. There are, however, a few names of eminence in various departments of knowledge; and the arts and sciences are now said to be upon the advance in Austria, but in the fine arts, it would be difficult to find an eminent sculptor or a good painter. Architecture is so little cultivated, that their best public buildings are generally planned by foreigners. In the mechanical arts they have evinced considerable native genius; but like that of the Germans, generally, its efforts have seldom been directed to any useful purpose. One mechanic has constructed a machine that performs all the functions of an expert chess player; another has made a head capable of imitating all the varied sounds of the human voice; and a third has invented an instrument that emits, simultaneously, all the sounds of music. In the latter science they have been thought to excel, and the names of Hadyn and Mozart, whose powers and taste were formed at Vienna, have sufficiently established their national fame. In mathematics, astronomy, and botany, they have also succeeded to a certain extent; and amongst the numerous professors of these sciences, Burke, and the Abbe Treisnecker, have eminently distinguished themselves. But education, and consequently general knowledge, in Austria has been much neglected. The empress Maria Theresa, who patronised learning, established schools in every part of the empire; which, with others that have since been added, have in a measure relieved the intellectual gloom which for so long a period shrouded the south of Germany. Universities, lyceums, district academies, gymnasiums, Latin schools, schools for teaching their native tongue, schools for diffusing the elements of religion, are now universal; and are supported at the expense of government. The young men are compelled to attend the line of study marked out for them, under pain of forfeiting all civil offices and employments.

In Vienna, alone, are sixty schools for instructing the poor in reading, writing, and arithmetic; one normal school, preparatory to the gymnasium; three gymnasia, in which the studies prescribed by government are, mathematics, geography, history, natural history, arithmetic, composition, classics, and religion; the Theresian academy, for the sons of the Catholic nobility and foreigners of distinction, under the care of a director, twenty-one professors, ten masters of modern languages, and several additional tutors; and an university, provided with forty-five professors, extra teachers, &c. The school of surgery at Vienna, is considerable; there are also imperial medical academies, imperial military academies, imperial polytechnic schools, for teaching the scientific principles of all trades and manufactures, and an imperial academy of oriental languages. Their universities, besides Vienna, are Prague, Pesh, Erlau, Lemberg, Milan, Mantua, Padua, and Pavia. To many of these public institutions are attached extensive libraries. That connected with the university of Vienna contains 90,000 volumes, and the Imperial library upwards of 200,000. The doors of the latter are regularly open several hours in the day for the use of the citizens, who are permitted to read any of the volumes in apartments provided for that purpose.

The languages of Austria are several, of which the Gothic or German is most prevalent. The Sclavonic is common in part of Hungary, Galicia, Bohemia, and Moravia. The proper Hungarian is a dialect of the Scythian. Latin is also spoken in Hungary; and on the borders of Turkey the Walachian language, which is a corruption of the Latin, is prevalent. The Italian is the common language of the southern provinces, and French is spoken by the higher classes.

The Austrians are, generally speaking, handsome and athletic, of German origin, mixed insensibly with the native inhabitants of Italy, Hungary, and Bohemia. The grand German outline is still visible, accompanied with the darker complexion, bolder features, blacker eyes, and more animated expression, which distinguish the countenance of the Austrian from those of his northern neighbours. They are a sensual people, but sensuality never enervates them. They possess an instinctive indifference to what would excite all the passions of an Englishman, and would rush from the ball to the battle, from the comic theatre to the field of blood, with apparent indifference; owing not to phlegmatic coldness, but to a peculiar felicity of temperament, which nature has conferred upon the constitution of the Austrian, by which he possesses an astonishing power of forbearance and self-command. The persons, manners, and accomplishments of the Austrian females have considerably attracted the attention of modern travellers, and have called forth some very lively and pertinent remarks from the pen of Mr. Lemaistre. 'The Austrian ladies,' says he, 'are the handsomest women I have seen on the continent; their countenances are expressive, and their complexions uncommonly fair. In beauty they are exceeded by no females in Europe; excepting only our own country-women, whose unrivalled superiority I believe is universally acknowledged. In manner they are elegant, and in conversation lively and well informed. Much greater attention seems to have been paid to their education, than is usual in other parts of the continent: all of them speak French with as much fluency as German, and some are proficients in English. The best works in these languages are familiar to them. They are completely free from pedantry; and I have had frequent reason to admire the taste and knowledge displayed in their remarks.' But as Austria is composed of separate kingdoms and states, whose manners and habits are many of them peculiar, we defer further particular observations on this till we come to treat of those states separately.

If we except Bohemia, Moravia, the northern parts of Austria, and a part of Hungary, this kingdom formed an integral part of the Roman empire, and abounds in antiquities and curiosities both natural and artificial. Castles, churches, and monasteries are common everywhere, whilst the southern parts, being near the centre of Roman power, are proportionably rich in ancient remains. The amphitheatre of Pola, about forty miles south of Trieste, stands near the extremity of a small peninsula, on the eastern shore of the Adriatic. This ancient edifice is elliptical in its figure, having three floors and rustic arcades, like the outer wall of the amphitheatre at Verona. Its length is 416 feet, and height ninety-seven feet. This is the only one of the ancient Roman elliptical precincts that now remains entire, those of Rome and Verona being much broken and dilapidated. Some imagine it to have been a theatre, and not an amphitheatre, because the seats only occupy one side, and are formed on the declivity of a hill. The amphitheatre at Verona is another building of the same description, though not so large, as the Coliseum at Rome; only a small part of the wall is standing, and the rest of the building scarcely rises above the summits of the surrounding houses. The seats within, constructed of stone, were renewed in the sixteenth century, and now form the surface of a large hollow inverted cone, capable of accommodating upwards of 22,000 persons. A part of these seats are enclosed in a small wooden theatre, in which plays are performed during the summer. The structure exhibits a fine specimen of Roman architecture, composed of squared masses of marble from Sant. Ambrosio, about nine miles distant. The soffit stones of the arcades are nine feet long. Some parts of the building are composed of large flat bricks, which have withstood the action of the sun and weather for 1700 years, and yet remain uninjured by time. The precinct of this ancient amphitheatre is 522 feet long, embellished by three tiers of rusticated arcades, ninety-six feet high, and before the falling of the fourth story of rectangular windows, presented a grand and pleasing appearance. The disposition of the seats, and of the stairs leading to them, is better seen in this amphitheatre than in any other Roman antiquities of the same kind; and the remains generally are in a better state of preservation. See AMPHITHEATRE.

The natural curiosities of Austria are numerous and interesting. The various Alpine scenery, glaciers, chasms, caves, curious depositions of stones, &c. have in all ages commanded the admiration of the traveller, and the attention of the antiquarian. Austria Proper contains a singular assemblage of rocks, near Trautenau in Bohemia, in the shape of flowers, reaching from fifty to 100 feet in perpendicular altitude, and of great extent; supposed to be the remains of a mountain, the intermediate parts of which have been removed. Near Szadello, about thirty miles north-west of Kaschau in Hungary, is a celebrated cavern, which runs under the mountains to the distance of several miles, and has never been completely explored. It includes a multiplicity of distinct caves and winding passages, separated by numerous impending stalactites; the whole forming so intricate a labyrinth, that Dr. Townson, who visited this country a few years ago, says, 'a man once lost in it, though he had lights and food to last him a month, would not be able to find his way out.' A party of curious travellers, it is said, once remained in it for three days without being able to explore its dimensions, or reach the opening. Near Szalitze, in the Carpathian range, is another remarkable cavern, within which is a small glacier; and at Demanovo is a curious cave, which contains the bones of numerous wild animals. Various other subterranean domes and caverns have also been found in all parts of the calcareous mountains, beneath the towering summits of the Alpine regions. The lake of Czirknitz, in the Illyrian provinces eastward of Trieste, is one of the most singular natural curiosities of the Austrian territories. It is about four English miles in length, and nearly that measure in breadth, surrounded with mountains on all sides, and of the depth of five or six feet. Although there is no visible place for the discharge of them, in June or July the waters subside, and at length are seen to retire into a number of caverns at the bottom of the lake; the herbage of the bed then begins to grow rapidly, and produces considerable crops, which are cut and preserved; after which the ground is grazed by cattle. In November, when the rains fall upon the adjacent hills, the waters issue again from their caverns, swell by reason of still gathering accessions, and spread into a perfect lake as before. The lake of Jessero, in the isle of Cherso, is classed among the natural curiosities of Austria, and said to discharge its waters but once in four or five years. In the same island are several curious caverns, in which have been found numerous fossil bones of oxen, horses, sheep, and other animals; amongst which none have been recognised as human. The salt-mines of Wieliczka, on the confines of Poland, exceed description; and those near Salzburg, on the western border of Austria, present an appearance so magnificent and sublime, as to be rated among the most stupendous and astonishing phenomena of Europe.

The islands belonging to Austria are few and unimportant, lying along the north-east shore of the Adriatic, from the Gulf of Juarnero to the southern point of Dalmatia. The principal are, Veglia, Osero, Grossa, Cherso, Lesina, Melida, and Brazza.

Of the provinces which make up the grand imperial dominions of Austria, many of them have constitutions different from each other. Hungary, as an hereditary and limited monarchy, has been in the house of Austria ever since the year 1437, when the archduke, having married the only daughter of king Sigismund, succeeded to the crown. The nation, however, shares the legislative and executive power with the emperor, who exercises his authority only through the medium of the States, a kind of parliament assembling at fixed periods for the transaction of public business. The Hungarian nobility also possess great power; and they alone, in state language, are included under the appellation of the Hungarian people, the rest being regarded as an inferior race of beings. Bohemia, Moravia, and the Tyrolese, also have an influence in the general government, and possess, to a certain degree, the privileges of Hungary. But in most of the provincial diets, the authority of the crown is so great, that the representatives can determine little else than the mode of raising taxes, so that the emperor is in a considerable degree unlimited in his sovereignty. In the ancient diet of the empire, Austria, independent of her electoral vote for Bohemia, had seven votes in the college of princes for the seven states of Austria Proper, Carinthia, Styria, Brixen, Trent, Tyrol, and Carniola. In the new diet, or 'confederation of the sovereigns and free towns of Germany,' formed in 1815, Austria, without having any superiority over the other states in point of rank, was declared by the Congress of Vienna (act fifty-seventh), to have the presidency with a vote. In the general assembly Austria has now four votes. The executive government consists of four great departments, established at Vienna, organized originally by the counsels of Maria Theresa. One of these regulates the internal concerns of the empire, another its foreign affairs, a third its military conduct, and the fourth the government of Hungary. These different parts of the administration are identified in numerous boards, chanceries, councils, ministries, &c. The laws and jurisprudence of his imperial and royal apostolic Majesty's dominions, are in the general very vague and complicated. Bohemia and Moravia are divided into circles, each under a separate court of judicature from which lies a right of appeal to the supreme tribunal in the provincial capital. Every county in Hungary has its ruling assembly and court of justice, subject to an appeal to the district judicature, thence to the royal tribunal at Buda, and thence to the king in person. A new code of mild and salutary laws has however been recently drawn up at the instance of the government, and promulgated; the criminal part, in 1804, and the civil in 1812; which are made the universal code of jurisprudence for the the Austrian empire.

The entire revenue of Austria has been calculated at twenty-two millions, arising chiefly from taxes on the land, and articles of internal consumption. Joseph II. proposed a new land and poll tax, which has since been lucrative. The imperial domains, monopoly of tobacco, duties on stamps, hair-powder, glass, china, starch, wine, beer, brandy, carriages, legacy duties, fees on titles of nobility, toleration tax on the Jews; together with the duties arising from the crown lands, mines, coining, salt, tolls, fines, penalties, passing the frontiers, incomes upon vacant bishoprics, salaries, pensions, &c. of Hungary, constitute a considerable part of the above sum. Paper money has been frequently employed by Austria in her distress; and bank notes to the amount of £100,000,000 were in circulation as recently as 1810. The national debt, before the French revolution, amounted to £20,000,000, in 1805, it had increased to £30,000,000, and is at present £150,000,000. Of this two-thirds was created by the issue of paper money, which, however, is not deemed re-payable at its nominal amount.

The military establishment of Austria under Joseph II. rose into considerable importance; and in 1784, though a season of peace, the Austrians were able to muster more than 200,000 men; and after the French revolution, at the peace of 1797, they kept in pay an army of nearly 300,000. There were lately in the Austrian army no fewer than nine field-marshals, twenty-one generals of artillery, thirteen generals of cavalry 136 lieut.-generals, 258 major-generals. Since 1805, however, the troops of Austria were greatly reduced, till she reached her ebb in 1809, having lost about one-eighth part of her population, and one-tenth of her resources. Afterwards her army amounted to 470,000 men; and in the campaign of 1813 and 1814, when she took the field afresh against the common enemy, her troops were more numerous than at any former period. Austria at present, as one of the united kingdoms, supplies 94,822 men to the military establishments of the German Confederacy, which is one in every hundred of her population in Germany, and, allowing the same proportion for all the other parts of the empire, the standing army of Austria will amount to 280,000 men. The Bohemian army is, however, stated at 50,000 men, which is about one in every sixty-four of the population. The Hungarian army is calculated at twelve regiments of infantry, and ten o hussars, the former consisting each of 3837 men and the latter of 1698, forming an aggregate o 63,000; which, compared with seven millions and a half, the present population of Hungary, yields about the proportion of one to every hundred and twenty. The Hungarian army consists of three separate classes of individuals—the nobles, who are called together at the pleasure of the sovereign; the standing army, kept up by recruiting and conscription; and those of the military frontiers, where every man holds his possessions on condition of being ready to take up arms when called upon. Austria has nothing that deserves the name of a maritime force, but provides a few frigates and armed vessels for the protection of trade. The vessels called tschaiken, manned with about 1000 seamen and soldiers, are placed on the Danube towards the Turkish frontiers at the expense of government. There are in the Austrian states the following orders, having the emperor or empress at their head: the Golden Fleece, Maria Theresa, St. Stephen, Elizabeth, and the Star and Cross.

Of the political and historical memoirs of Austria, the reader will be able to form but a very imperfect idea. To write the history of a kingdom composed of kingdoms, with separate histories of their own; kingdoms too, which have been connected with other kingdoms, and those kingdoms, which have made a figure upon the earth, have balanced for ages the crisis of European power and politics, have given rise to governments, laws, manners, and language, and to surrounding nations, whose histories have also been embarked upon the stream of time, and intermingled with the politics of other states, is a work of no small difficulty. The Austrian history, if not obscure, is at least perplexed. The revolutions, alike incident to all human governments, the fluctuations of empire, the ebb and flow of territory, have been so frequent and considerable, that the high and low water mark of boundary at different periods of history, during the spring and neap tides of national influence and power, are only to be sought successfully in larger geographical treatises, and would require a distinct detail of relation beyond what the limits of an encyclopædia can possibly allow.

The original population of Austria was principally Gothic and Sclavonic, and the descendants of the former still constitute the principal part of the inhabitants. Moravia and Bohemia were stocked by the latter, whilst the southern territories were inhabited by the descendants of the cisalpine Gauls, and the Roman colonies, which had been planted there. Only a small part of the present imperial dominions belonged originally to the house of Austria. The vicissitudes to which it has been subject from the period of its origination, are what have chiefly contributed to raise the empire to its present rank among European sovereignties, and to trace those vicissitudes down the variable narrative of their political story, affords an interesting topic in geographical speculation.

The princes of these houses are descended from the ancient dukes of Alsace, and bore the title of counts of Hapsburg, from the castle o at name in the Aar on Switzerland, their pa- rimonial residence, before their accession to the mperial throne of Germany. In 1273 count Rodolph was elected king of the Romans, and estowed the duchy on his son Albert, with whom, therefore, the house of Austria commences. This duchy was formed of the ancient margraviate, with that part of Bavaria situated bove the river Enns; and passed to the house of Hapsburg as a fief of the empire, on the extinc- on of the old ducal family. The counts of Hapsburg at that time possessed a great part of berland in Switzerland, and a considerable rtion of Suabia, to which, in 1284, were added yria, Carinthia, and Carniola. But Albert, ho was elected king of the Romans in 1298, uring the revolutionary troubles of Switzerland, hich happened about nine years after his ac- ssion, lost all his hereditary possessions in at country. The acquisition of Tyrol in 364 made some addition, and Albert II. the st duke of Austria, was invested, in 1438, with e imperial purple, which has, ever since that riod, been retained by his descendants in almost ninterrupted succession. The emperor Max- ilian, grandfather to Charles V. acquired the rritory of the low countries by marriage, and like manner his son Philip, espousing the iress of the Spanish crown, obtained the pos- ssion of that kingdom, with the dominion of American colonies. At his decease the ited kingdoms of Austria, Spain, and Spanish merica, descended to his successor Charles V. ho, about the year 1527, added those of Hun- ry, Bohemia, Moravia, Silesia, and Lusatia, hen Austria appeared in the zenith of her ry. In 1556 Charles V. made over the panish dominions, and the Netherlands, to his Philip II. under whom they suffered con- derable diminution; the seven united pro- nces of the Netherlands entirely throwing off eir allegiance. In 1648, at the conclusion of thirty years war, Austria was obliged to linquish the two provinces of Lusatia and Al- ce, ceding the former to the elector of Saxony, d the latter to the king of France; but shortly ter the emperor Leopold, son of Ferdinand III. ded the whole of Transylvania, and con- derably enlarged the boundaries of Hungary, ter which few fluctuations occurred in the empire ll the reign of Charles VI. when the peace of trecht in 1713, and the Barrier Treaty, two ars afterwards, added Belgium, the duchy of ilan, the kingdom of Naples, and the island of rdinia, which last was six years afterwards changed with the duke of Savoy, for the isle Sicily. By the peace of Passarowitz, in 1718, harles VI. acquired the Bannat of Temeswar, elgrade, part of Servia, Bosnia, and Walachia; ll of which, however, except the Bannat, were stored to the Porte in 1739. In 1735, after unsuccessful opposition to France, the king- m of Naples, and the island of Sicily, were ade over by the Emperor to the infant Don rlos of Spain, in exchange for the duchies of rma and Placentia. At last, after various anges, as well in the outline as in the inward licy of the empire, Charles VI. died, in 1740, and with him ended the male succession of the Hapsburg house of Austria.

Maria Theresa, eldest daughter and heiress of the deceased emperor, was married, in 1736, to Francis duke of Lorraine, afterwards grand duke of Tuscany; and immediately on her advance to the sovereignty had to carry on a long and extensive war against Prussia, Saxony, Bavaria, and Spain; all of whom made pretensions to some part or parts of her dominions. After a powerful but unsuccessful struggle for empire, Prussia, in the year 1742, obtained the greater part of Silesia, and the country of Glatz; and Spain, about six years afterwards, took possession of the duchies of Parma, Placentia, and Guastalla. The war of 1756 producing no remarkable change of territories, the Austrian boundaries continued the same, with little variation, till the partial dismemberment of Poland, in 1773, when she acquired Galicia and Ladomaria; and was still further augmented, in 1777, by the addition of the Bukowine; and in 1778, by the accession of the Innviertel on the side of Bavaria.

The first emperor of the Lorraine branch was Joseph II. who, after sharing the government with his mother Maria Theresa for several years anterior to her decease, was fully vested with the sovereignty in 1780. His reforms in the executive branches of government, abolition of sinecures, suppression of convents, modification of the dependence of the clergy upon Rome, and the perfect toleration of all dissenters, though they have been censured as the extreme of imprudence, were decidedly promoted for the consolidation of his immense territories, the manumission of his subjects from the civil disabilities under which many of them labored, and the establishment of a more worthy system of regular administration. To whatever extent such measures might have been neutralized by an obvious precipitancy, and rashness in the mode of execution, they show a great monarch, influenced by the best of principles, laboring in the common cause of humanity, justice, and patriotism; directing all his efforts towards the happiness of his people, and the welfare of his dominions. It is said that a visit which he received from pope Pius VI. two years after his accession, effected no alteration in his designs. After an active but variable reign, rendered remarkable towards the close, by a new war with the Turks, he died on the 20th of February, in the year 1790, and was succeeded by his brother Leopold II. who died at the commencement of the revolutionary war, on the 1st of March, 1792. The crown of Austria then descended to his eldest son, Francis II. the present emperor, and the sovereignty of the grand duchy of Tuscany to his second son Ferdinand. From this time the empire of Austria began to decline.

At this period the population of the empire was estimated at 25,000,000, and was increased, in 1796, by the accession of a great part of Poland, which was then finally dismembered and divided between Austria, Russia, and Prussia: but it was reduced to little more than its former amount the following year by ceding to France, Lombardy, the

Netherlands, and all the Austrian districts on the left bank of the Rhine. The war of 1799 gave early hopes of success, but the withdrawment of Russia from the coalition, and the fatal days of Marengo and Hohenlinden, obliged Austria to conclude a treaty with France in 1801; in which, although she obtained Saltzburg and Berchtologaden, she was deprived of nearly all her Venetian states. The third war, in 1805, proved still shorter and more disastrous; and after the overthrow at Ulm and Austerlitz, the remainder of the Venetian states, Tyrol and Suabian principalities, containing a population of 3,000,000, were given as the price of peace; a period was likewise put to the Germanic constitution, and the title of Emperor of Austria substituted for Emperor of Germany and King of the Romans. In 1809 the resistance of Spain to Buonaparte prompted Austria to enter upon a new war with France. Her army was numerous and well disciplined, and a large portion of the French was employed in the peninsula; but the decided neutrality of Prussia, and the circumstance of Russia and Bavaria, with the states composing the confederation of the Rhine, taking part against Austria, enabled Buonaparte to acquire a decided victory, and once more to enter Vienna. This led to further losses, but
left the emperor no alternative but a tr
terms were the union of the emperor's
with Napoleon in marriage, and the sa
considerable territory and population;
the provinces of Carniola, Trieste, Vil
greater part of Croatia, and Agra
Galicia, the circle of Zamosc, a circle
Galicia, the greater half of Hansruckvi
Innviertel, Berchtolsgaden, and Saltzb
whole including 45,000 square miles an
three millions and a half of inhabitants.
remained overawed by France until
struction of the French armies in Russ
she again asserted her independen
the subsequent success of the allies
her in more than her former splend
ninety-third act of the Congress of
restored nearly all that had been lost,
succeeding one annexed several other
side of Italy, which more than compen
the remaining deficiency. The dominio
Austrian empire, as fixed by this congr
according to Blumenbach, been divi
twenty-one provinces, or governments
the four dependent states. To these h
the following extent and population.

	I.—AUSTRIAN EMPIRE.	Ger. sq. miles.	Inhabitants.	Ger. sq. miles.	Inha
1.	The kingdom of Bohemia			956·80	3,2
2.	The margraviate of Moravia			417·64	1,6
3.	The dukedom of Silesia			86·85	
4.	Austria below the Enns			363·65	1,0
5.	Austria above the Enns	151·86	417,625	344·32	7
	Circle of the Inn and Hansruck	59·92	197,537		
	Saltzburgh	132·54	141,699		
6.	The duchy of Styria			398·98	7
7.	The duchy of Carinthia			190·90	2
8.	Illyria	190·61	358,831	250·95	4
	Part of Croatia	60·34	108,205		
9.	The coast district			176·18	4
10.	Tyrol and Voralberg			520·44	7
11.	The Lombardo-Venetian kingdom			867·50	4,1
12.	The government of Dalmatia			274·94	2
13.	The kingdom of Galicia			1526·12	3,7
14.	Civil Hungary, Croatia and Sclavonia			4097·06	8,2
15.	Civil Transylvania			1118·70	1,5
16.	Transylvanian military frontiers				
17.	Bannat frontiers			186·00	1
18.	Sclavonian frontiers			139·40	2
19.	Warasdiner military government			67·40	1
20.	Carlstadter military government			166·40	1
21.	Bannat regiments			54·20	
				12,204·43	28,0
	II.—DEPENDENT STATES.				
1.	Grand dukedom of Tuscany			431·00	1,1
2.	Dukedom of Modena			92·31	3
3.	Dukedom of Massa and Carrara, with Garfagnana			23·00	
4.	Dukedom of Parma			101·62	3
				647·93	1,9

Austria, San Felippe de, a city of South America, in the province and government of Cumana, forty-eight miles from Cumana, and containing 250 families. Long. 63° 41′ W., lat. 10° 31′ N. There is another small pla
same name, four leagues south-west of

Austriacus, in ornithology, a specie
named by Latham the Austrian kite.

AUSTRO Africus, the S. S. W. wind.

AUSTROMANCY, Austromantia, properly denotes soothsaying, or a vain method of predicting futurity, from observations of the winds.

AUSTURCUS, or Osturcus, in ornithology, a goshawk; from whence we usually call a falconer, who keeps that kind of hawks, an ostringer. In ancient deeds, there has been reserved, as a rent to the lord, unum austurcum.

AUSURIANI, in Roman antiquity, a military order, similar to that of hussars among the moderns.

AUTENIGUA, the name given by the natives to a region of southern Africa, on the east of the Cape of Good Hope; and signifying, in their language, the land of honey. It now forms part of the district of Zwellendam, and is represented by Vaillant as a delightful region, having a great variety of surface and scenery, great fertility, and abundance of honey. It was partially inhabited by Dutch colonists, whilst in possession of that nation; but it has been much improved since it came under the authority of the English. It abounds with all the wild animals common to southern Africa. See Zwellendam.

AUTENOW, a town of Russia, in the government of Kiov, eighteen miles W. S. W. of Bialacerkier.

AUTER Droit, in law, is where persons sue, or are sued, in another's right; as executors, administrators, &c.

Auter Vie; in law, a person who holds an estate by the life of another is usually called tenant per auter vie.

AUTHEN'TICATE,
Authen'tical,
Authen'tically,
Authen'ticalness,
Authenti'city,
Authentick,
Authen'tickly,
Authentick'ness

Gr. *αυθεντικως*, Lat. cum auctoritate, with authority. Certo auctore, the author being well known; to make known the author, to give up the author, or authority; to refer to; to rely on information; to vouch for the truth of a statement. Authentic seems to have been the proper epithet for a physician regularly bred or licensed. The diploma of a licentiate runs, 'Authentice licentiatus.'

Thirdly, it appeareth by regesters and recordes faithfully and *autentiquely* made, yet preserued for confirmation of the same. *Hall.* Henry VIII.

This point is dubious, and not yet *authentically* decided. *Brown's Vulgar Errours.*

Of statutes made before time of memory, we have no *authentical* records, but only transcripts. *Hale.*

Thou art wont his great *authentick* will
Interpreter through highest heaven to bring.
Milton.

She joy'd th' *authentick* news to hear,
Of what she guess'd before with jealous fear.
Cowley.

Conscience never commands or forbids any thing *authentically*, but there is some law of God which commands or forbids it first. *South.*

But censure's to be understood
The *authentick* mark of the elect,
The public stamp heav'n sets on all that's great and good.
Swift.

Nothing can be more pleasant than to see virtuosos about a cabinet of medals, descanting upon the value, rarity, and *authenticalness* of the several pieces. *Addison.*

The nations that, according to the best *authenticated* history, appear to have been first civilized, were those that dwelt around the coast of the Mediterranean sea. *Smith's Wealth of Nations.*

AUTHENTICS, Authenticæ, in the civil law, is a name given to the Novels of Justinian. The reason of the denomination is not well known. Alciat will have it to have been first given them by Accursius. These novels were originally composed in Greek, and afterwards translated into Latin by the patrician Julian, who reduced them into less compass. And in the time of Bulgaris, there was a second version made, more exact and literal, though not quite so elegant as the former. This translation being preferred by Accursius, he called it authentica, by way of preference to that of Julian, as being more conformable to the original. They are hereby distinguished from some other publications of later imperial constitutions, which are not regarded as of much authority.

AUTHIE, a river of France, which rises in the department of the Straits of Calais, and falls into the sea between the Somme and the Canche.

AUTHON (John d'), a French historian of the sixteenth century, abbot of Angle in Poitou. He wrote the history of France from 1490 to 1508, which has never been all printed. He died in 1523.

AU'THOR, *v.* & *n.*
Au'thoress,
Author'itative,
Author'itatively,
Author'ity,
Authoriza'tion,
Au'thorize,
Au'thorless,
Au'thorship.

Some contend for the Latin *auctor*, from *augeo*, *auctum*, to increase, i. e. to carry on an undertaking. It seems to relate more to the ground than to the form of the work. Others refer its origin to *αυθεντικως*, or the root which it represents. Whether this etymology be admitted or not, the verb and its correlatives convey the ideas of beginning, creation, foundation, invention, countenance, support, and power.

They consider the main consent of all the churches in the whole world, witnessing the sacred *authority* of Scripture, ever sithence the first publication thereof, even till this present day and hour *Hooker.*

Isab. O but man, proud man,
Drest in a little brief *authority*,
Most ignorant of what he's most assured,
His glassy essence like an angry ape,
Plays such fantastick tricks before high heav'n,
As makes the angels weep.
Shakspeare. Measure for Measure.

Idle old man,
That still would manage those *authorities*
That he hath giv'n away! *Id. King Lear.*

That which is the strength of their amity, shall prove the immediate *author* of their variance. *Shakspeare.*

I know, my lord,
If law, *authority*, and pow'r deny not,
It will go hard with poor Antonio. *Id.*

But I suffer not a woman to teach, nor to usurp *authority* over the man, but to be in silence. *Paul.*

War mends but few, but spoils multitudes; it legitimates rapine, and *authorises* murther. *Jeremy Taylor.*

Although their intention be sincere, yet doth it notoriously strengthen vulgar errour, and *authorize* opinions injurious unto truth. *Brown's Vulgar Errours.*

Now while the tortur'd savage turns around,
And flings about his foam, impatient of the wound;
The wound's great *author* close at hand provokes
His rage. *Dryden's Fables.*

Yourself first made that title which I claim,
First bid me love, and *authoriz'd* my flame.
Dryden.

The obligation of laws arises not from their matter, but from their admission and reception, and *authorization* in this kingdom. *Hale.*

Power arising from strength, is always in those that are governed, who are many: but *authority* arising from opinion, is in those that govern, who are few. *Temple.*

The woods are fitter to give rules than cities, where those that call themselves civil and rational, go out of their way, by the *authority* of example. *Locke.*

The faith or persuasion of a Divine revelation is a Divine faith, not only with respect to the object of it, but likewise in respect to the *author* of it, which is the Divine spirit. *Tillotson.*

From his loins
New *authors* of dissension spring; from him
Two branches, that in hosting long contend
For sov'reign sway. *Philips.*

A more decisive proof cannot be given of the full conviction of the British nation, that the principles of the Revolution did not *authorize* them to elect kings at pleasure, than their continuing to adopt a plan of hereditary protestant succession in the old line. *Burke.*

AUTOCABDALI, in antiquity, an order of musicians, who wore an ivy crown or garland. Scaliger seems to rank them in the number of mimi.

AUTOCEPHALUS; from *αυτος*, ipse, and *κεφαλη*, head; a person who has no one over him. This denomination was given, by the Greeks, to certain archbishops who were exempted from the jurisdiction of patriarchs. There were several other bishops in the east, who were autocephali; and in the west those of Ravenna pretend to the same right.

AUTOCHTHONES, an appellation assumed by some nations, importing that they sprung, or were produced, from the same soil which they still inhabited. In this sense autocthones amounts to the same with aborigines. The Athenians valued themselves on their being autochthones, self-born, or *γηγενεις*, earth-born; see ATTICA, it being the prevailing opinion among the ancients that, in the beginning, the earth, by some prolific power, produced men, as it still does plants.

AUTO'CRAT,
*AUTOC'RASY,
AUTOCRAT'ICAL,
AUTOCRATOR'ICAL. } Gr. *αυτος*, himself, and *κρατος*, power; the possessor of uncontrollable power. The emperor of Russia is styled the 'autocrat of all the Russias.'

The Divine will is absolute; it is its own reason: it is both the producer and the ground of all its acts. It moves not by the external impulse or inclination of objects, but determines itself by an absolute *autocrasy.* *South's Sermons*, x.

The Father, Son, and Holy Ghost, in respect of the same divinity, have the same *autocratorical* power, dominion, and authority. *Pearson on the Creed.*

AUTOCRATOR; from *αυτος*, himself, ar *κρατος*, power; a person vested with an absolu independent power, by which he is rendered u accountable to any other for his actions. T power of the Athenian generals, or commander was usually limited: so that at the expiration their office, they were liable to render an accou of their administration. But, on extraordinary o casions, they were exempted from this restrain and sent with uncontrollable authority: in whic case they were styled *Αυτοκρατορες*. The sam people also applied the name to some of the ambassadors, who were vested with a full powe of determining matters according to their ow discretion. These were denominated *Πρεσβει* *Αυτοκρατορες*, and resembled our plenipotentiaries.

AUTO DA FE, or act of faith. See ACT.

AUTODIDACTUS; from *αυτος* and *διδασκω*, to learn; a person self-taught, or who has had no master or assistant of his studies.

AUTOGENIAL; from *αυτος* and *γιγνομαι*, to beget; self-begotten.

AUTOGLYPHUS LAPIS, a stone mentioned by Plutarch, as having naturally impressed on it the figure of Cybele. It is said to have been found in Sagaris a river of Persia. Doubtless if any such stone ever existed, the priests had it made to deceive the people.

AUT'OGRAPH, *αυτος*, myself, and *γραφω*, I write. An original manuscript.

He did accurately describe and turn into Latin from the original *autographe* in Cambridge public library. *Wood's Athenæ Oxonien*

AUTOLITHOTOMUS, one who cuts himself for the stone. Of this we have a very extraordinary instance given by Reiselius, in the Ephemerides of the Academy Natura Curiosorum, dec. 1, an. 3, obs. 192.

AUTOLOGIST; from *αυτος*, self, and *λογος*, speech; one who speaks much of himself.

AUTOLOGY, speaking of or to one's self.

AUTOLOLÆ, an ancient people of Mauritania, descended from the Gætuli. They excelled all their neighbours in running.

AUTOLYCUS, in fabulous history, a son of Mercury by Chione, a daughter of Dædalion. He was one of the Argonauts, famous for his cunning as a thief. After stealing the flocks of his neighbours, he altered their marks, and mingled them with his own. But Sisyphus, son of Æolus, discovered his craft; and when Autolycus stole his flocks, he picked out his own by a mark which he had made under their feet. The artifice of Sisyphus pleased Autolycus so much, that he directly formed an intimacy with him, and even allowed him freely to enjoy the company of his daughter Anticlea, who became pregnant of Ulysses, and was soon after espoused to Laertes.

AUTOLYCUS, a Greek mathematician and astronomer of Pitane, in Æolia, who flourished about 320 years before Christ. He was preceptor in mathematics to Arcesilaus, who was also disciple of Theophrastus, the successor of Ari totle. His works extant are, a Treatise on th Movable Sphere, published by Dasypodius Greek and Latin, 8vo. at Strasburg, in 175 and in a Latin translation in the Synopsis M ematica of Mersennus, published in 4to. at Paris, in 1644; and also a Treatise on the Rising and Setting of the Stars, edited, with the former work, by Dasypodius. Diog. Laert. Vit. Arcesil. Fabr. Bid. Græc. tom. ii. p. 89. Montucla, Hist. Mathem. t. i. p. 192.

AUTOMATE, called also HIERA, one of the Cyclades, an island on the north of Crete, said to have emerged out of the sea, between the islands Thera and Therana, in the fifth year of the emperor Claudius; in extent thirty stadia.

AUTOM'ATON, AUTOM'ATOUS, AUTOMA'TIC. } Gr. Αυτοματος. Ex. ματην, frustra, vel μαομαι, excitor. Something self-moved; deriving its motion from internal machinery.

> Clocks, or *automatous* organs, whereby we distinguish of time, have no mention in ancient writers.
> *Brown's Vulgar Errours.*

> For it is greater to understand the art whereby the Almighty governs the motions of the great *automaton*, than to have learned the intrigues of policy.
> *Glanville's Scepsis.*

> The particular circumstances for which the *automata* of this kind are most eminent, may be reduced to four.
> *Wilkins.*

AUTOMATON may be farther defined, a machine, so constructed by means of weights, levers, springs, wheels, &c. as to move for a considerable time, as if endued with animal life. According to this definition, clocks, watches, and all machines of that kind may be ranked as a species of automata. But the word is most commonly applied to such machines as are made in the form of men and other animals, at the same time that their internal machinery is so contrived, that they seem voluntarily to act like the animals they represent. It has fallen in the way of the writer of this paper to have been making a few collections on this subject for some years past; and, observing that the whole direction of mechanical genius to these inventions has at present terminated in amusing, rather than any particularly useful machines, he has often entertained himself with considering the powers of man as a mere animal machine, in contrast with their inventions; the highest and best of which imitate his motions.

Political economists have frequently amused themselves and the public with the nicely-balanced powers of man as a propagating and eating animal, and philosophers and divines then assure us that he is, in other and higher respects, but a machine of a superior description; in especial deference to the latter grave authorities, we, therefore, take it for granted in this paper, that man is a machine, and shall not presume to arrogate for him any higher pretensions. We know nothing of his impulses as an animal, nor of the duties or influences to which he is subject as a rational being, if such he be; we only propose to introduce to our readers a variety of claimants for the honor of having made a part of him—of imitating portions of his organs, in their actual exercise—and isolated actions of his very mind. What wonder, if, in the progress of these efforts, our artists should occasionally have struck off a complete and clever duck, a learned fly, or a royal eagle!

Automata have been favorite objects of mechanical contrivance from a very early period. If the term, indeed, may be allowed to include what some writers have considered under it, their history would quickly swell into a volume. The celebrated Glanville, for instance, speaks of 'the art whereby the Almighty governs the motions of the great automaton' of the universe! Bishop Wilkins ranks the sphere of Archimedes amongst the αυτοματα στατα, 'or such as move only according to the contrivance of their several parts, and not according to their whole frame.' It was, in fact, an early orrery, according to Claudian:

> Jupiter in parvo cum cerneret æthera vitro,
> Risit, et ad superos talia dicta dedit;
> Huccine mortalis progressa potentia curæ?
> Jam meus in fragili luditur orbe labor, &c.

This learned prelate has even extended the application of the term to machines moved, in consequence of their peculiar construction, by external forces or elements, as mills, ships, &c. Its modern acceptation, however, and that to which we shall restrict ourselves, will not include all machines that are self, or internally moved. It is confined to the mechanical imitations of the functions and actions of living animals, and particularly those of man.

The celebrated story of the statue of Memnon, one of the wonders of Ancient Egypt, has some pretensions to lead the way in this historical sketch. We have positive testimony (Strabo, lib. xvii.) to the circumstance of the most beautiful sounds being emitted from this statue, at the rising and setting of the sun; and from the pedestal, after the statue was overthrown. What was the contrivance in this case, it may be vain to conjecture; but automata are, by profession, a puzzling race. If a certain disposition of strings, exposed to the rarefaction of the air, or to the morning and evening breezes, after the manner of our Æolian harps, produced these sounds; or if any method of arranging the internal apertures so as to receive them from a short distance, were the artifice, a considerable acquaintance with the science of music, and with accoustics generally, will be argued. Wilkins quotes a musical invention of Cornelius Drebel, of similar pretensions, which 'being set in the sunshine, would, of itself, render a soft and pleasant harmony, but being removed into the shade would presently become silent.'

The statues and the flight of Dædalus are equally famous, and, perhaps, fabulous. Aristotle, however, speaks of the former in his treatise De Anima, lib. i. c. 3. as successful imitations of the human figure and human functions in walking, running, &c. and attempts to account for their motions by the concealment o quicksilver.

Archytas' flying dove, originally mentioned in Favorinus, is another of the ancient automata. The inventor is said to have flourished about B. C. 400, and was a Pythagorean philosopher at Tarentum. It was made of wood, and the principal circumstance of its history, which Favorinus mentions, that is like some other birds of too much wing, when it alighted on the ground, it could not raise itself up again. Aulus Gellius, in his Noctes Atticæ, attempts to account for its flight, by observing, 'Ita erat scilicet libramentis suspensum, et aura spiritus inclusa atque occultâ consitum,' &c. that it was 'suspended by balancing, and moved by a secretly enclosed aura or spirit.'

Friar Bacon, we all know, made a brazen head that could speak, and that seems to have assisted, in no small degree, in proclaiming him a magician. Albertus Magnus is also said to have devoted thirty years of his life to the construction of an automaton, which the celebrated Thomas Aquinas broke purposely to pieces. Men, treated as these were by the age in which they lived, had no encouragement to hope that any details of their labors would reach posterity.

Amongst the curiosities of his day, Walchius mentions an iron spider of great ingenuity. In size it did not exceed the ordinary inhabitants of our houses, and could creep or climb with any of them, wanting none of their powers, except, of which nothing is said, the formation of its web. Various writers of credit, particularly Kircher, Porta, and bishop Wilkins, relate that the celebrated Regiomontanus (John Muller) of Nuremberg, ventured a loftier flight of art. He is said to have constructed a self-moved wooden eagle, which descended toward the emperor Maximilian, as he approached the gates of Nuremberg, saluted him, and hovered over his person as he entered the town. This philosopher, according to the same authorities, also produced an iron fly, which would start from his hand at table, and after flying round to each of the guests, returned, as if wearied, to the protection of his master.

An hydraulic clock, presented to the emperor Charlemagne, by the caliph Haroun al Raschid, merits record in the history of these inventions. It excited the admiration of all Europe at the period of its arrival. Twelve small doors divided the dial into the twelve hours, and opened successively as each hour arrived, when a ball fell from the aperture on a brazen bell and struck the time, the door remaining open. At the conclusion of every twelve hours, twelve mounted knights, handsomely caparisoned, came out simultaneously from the dial, rode round the plate, and closed the doors. Dr. Clarke, in his last volume of Travels (part iii. Scandinavia, sec. 1. 4to. 1819), mentions a similar contrivance in a clock at Lubeck, of the high antiquity of 1405. Over the face is an image of Jesus Christ, on either side of which are folding-doors, which fly open every day as the clock strikes twelve. A set of figures, representing the twelve apostles, then march forth on the left hand, and, bowing to our Saviour's image as they pass in succession, enter the door on the right. On the termination of the procession the doors close. This clock is also remarkably complete, for the age, in its astronomical apparatus; representing the place of the sun and moon in the ecliptic, the moon's age, &c. Similar appendages to clocks and time-pieces became too common, at the beginning of the last century, to deserve particular notice. We should not, however, omit some of the productions of the L Droz family, of Neufchatel. About the middl of last century, the elder Le Droz presented clock to the king of Spain, with a sheep and dog attached to it. The bleating of the forme was admirably correct, as an imitation; and the dog was placed in custody of a basket of loose fruit. If any one removed the fruit, he would growl, snarl, gnash his teeth, and endeavour to bite, until it was restored.

The son of this artist was the original inventor of the musical boxes, which have of late been imported into this country. Mr. Collinson, a correspondent of Dr. Hutton's, thus clearly describes this fascinating toy in a letter to the doctor, inserted in his Mathematical and Philosophical Dictionary:—'When at Geneva, I called upon Droz, son of the original Droz, of La Chaux de Fond, where I also went. He showed me an oval gold snuff-box, about, if I recollect right, four inches and a-half long, by three inches broad, and about an inch and a-half thick. It was double, having an horizontal partition; so that it may be considered as one box placed on another, with a lid, of course, to each box. One contained snuff; in the other, as soon as the lid was opened, there rose up a very small bird, of green enamelled gold, sitting upon a gold stand. Immediately this minute curiosity wagged its tail, shook its wings, opened its bill of white enamelled gold, and poured forth, minute as it was (being only three-quarters of an inch from the beak to the extremity of the tail) such a clear and melodious song as would have filled a room of twenty or thirty feet square with its harmony.'

In Ozanam's Mathematical Recreations, we have an account, by the inventor, M. Camus, of an elegant amusement of Louis XIV. when a boy. It represented a lady proceeding to court, in a small chariot drawn by two horses, and attended by her coachman, footman, and page. When the machine was placed at the end of a table of proper size, the coachman smacked his whip, the horses started off with all the natural motions, and the whole equipage drove on to the farther extremity of the table; it would now turn at right angles in a regular way, and proceed to that part of the table opposite to which the prince sat, when the carriage stopped, the page alighted to open the door, and the lady came out with a petition, which she presented with a courtesy to the bowing young monarch. The return was equally in order. After appearing to await the pleasure of the prince for a short time, the lady courtesied again, and re-entered the chariot, the page mounted behind, the coachman flourished his whip, and the footman, after running a few steps, resumed his place.

About the same period, M. Vaucanson, a member of the Academy Royal of France, led the way to the unquestionable superiority of modern times, in these contrivances, by the construction of his automaton duck, a production, it is said, so exactly resembling the living animal, that not a bone of the body, and hardly a feather of the wings, seems to have escaped his imitation and direction. The radius, the cubitus, and the humerus had each their exact offices. The auto maton ate, drank, and quacked in perfect harmony with nature. It gobbled food brought before it, with avidity, drank, and even muddled the water after the manner of the living bird, and appeared to evacuate its food ultimately in a digested state. Ingenious contemporaries of the inventor, who solved all the rest of his contrivances, could never wholly comprehend the mechanism of this duck. A chemical solution of the food was contrived to imitate the effect of digestion.

This gentleman is also celebrated for having exhibited at Paris, in 1738, an androides (from ανηρ, a man, and ειδος, a form; a term under which some scientific works have classed all the automata that have been made to imitate the human person), a flute-player, whose powers exceeded all his ancestry; and for the liberality and good sense with which he communicated to the academy, in the same year, an exact account of its construction. The figure was nearly six feet in height, and usually placed on a square pedestal four feet and a-half high, and about three feet and a-half broad. The air entered the body by three separate pipes, into which it was conveyed by nine pairs of bellows, which were expanded and contracted at pleasure, by means of an axis formed of metallic substances, and which was turned by the aid of clock-work. There was not even the slightest noise heard during the operations of the bellows: which might otherwise have discovered the process by which the air was conveyed ad libitum into the body of the machine. The three tubes, into which the air was sent by means of the bellows, passed again into three small reservoirs concealed in the body of the automaton. After having united in this place, and ascended towards the throat, they formed the cavity of the mouth, which terminated in two small lips, adapted to the performance of their respective functions. A small movable tongue was enclosed within this cavity, which admitted or intercepted the passage of the air into the flute, according to the tune that was executed, or the quantity of wind that was requisite for the performance. A particular species of steel cylinder, which was turned by means of clock-work, afforded the proper movements to the fingers, lips, and tongue. This cylinder was divided into fifteen equal parts, which caused the ascension of the other extremities, by the aid of pegs, which pressed upon the ends of fifteen different levers. The fingers of the automaton were directed in their movements by seven of these levers, which had wires and chains attached to their ascending extremities; these being fixed to the fingers, caused their ascension in due proportion to the declension of the other extremity, by the motion of the cylinder; and thus, on the contrary, the ascent, or descent, of one end of the lever, produced a similar ascent, or descent, in the fingers that corresponded to the others; by which one of the holes was opened or stopped agreeably to the direction of the music. The entrance of the wind was managed by three of the other levers, which were so organized as to be capable of opening or shutting, by means of the three reservoirs. By a similar mechanical process, the lips were under the direction of four levers; one of which opened them in order to give the air a freer passage; the other contracted them; the third drew them back; and the fourth pushed them in a forward direction. The lips were placed on that part of the flute which receives the air; and, by the different motions which have been already enumerated, regulated the tune in the requisite manner for execution. The direction of the tongue furnished employment for the remaining lever, which it moved in order that it might be enabled to shut or open the mouth of the flute. The extremity of the axis of the cylinder was terminated on the right side by an endless screw, consisting of twelve threads, each of which was placed at the distance of a line and a half from the other. A piece of copper was fixed above this screw; and within it was a steel pivot, which was inserted between the threads of the screw, and obliged the cylinder above-mentioned, to pursue the threads. Thus, instead of moving in a direct turn, it was perpetually pushed to one side; the successive elevation of the levers displaying all the different movements of a professed musician.

M. Vaucanson constructed another celebrated androides, which played on the Provençal shepherd's pipe, and beat, at the same time, on an instrument called the tambour de basque. This was also a machine of the first order for ingenious and difficult contrivance. The shepherd bore the flageolet in his left hand, and in the right a stick, with which he beat the tabor, or tambourine, in accompaniment. He was capable of playing about twenty different airs, consisting of minuets, rigadoons, and country-dances. The pipe, or flageolet, which he was made to play, is a wind-instrument of great variety, rapidity, and power of execution, when the notes are well filled and properly articulated by the tongue; but it consists only of three holes; and the execution, therefore, mainly depends upon the manner in which they are covered, and the due variation of the force of the wind that reaches them. To give the androides power to sound the highest note, M. Vaucanson found it necessary to load the bellows, which supplied the air to this tone, with fifty-six pounds weight, while that of one ounce supplied the lowest tone. Nor was the same note always to be executed by exactly the same force of air; it was necessary to pay the most accurate attention to its place on the scale, and to so many difficult circumstances of combination and expression, that the inventor declares himself to have been frequently on the point of relinquishing his attempt in its progress. In the tambourine accompaniment, too, there were numerous obstacles to overcome; the variation of the strokes, and particularly the continued roll of this instrument, was found to require no small ingenuity of construction.

All other exhibitions of mechanical skill, in imitation of the powers of human nature, were destined, however, to give way, in 1769, to the pretensions of the chess-player of M. Wolffgang de Kempelin, a Hungarian gentleman, and aulic counsellor of the royal chamber of the domains of the emperor in Hungary. Called in that year to Vienna, by the duties of his station, this gentleman was present at some experiments in magnetism, made before the empress Maria Theresa, when he ventured to hint that he could construct for her majesty a piece of mechanism far superior to any of those which had been exhibited. His manner of remarking this, excited the attention of the empress, who encouraged him to make the effort, the automaton chess-player, which has since been exhibited in all the capitals of Europe, was, within six months after this period, presented at the imperial court. It is a presumption in favor of the pretensions of this contrivance to be a master-piece of mere mechanism, that the original artist, after having gratified his exalted patroness and her court with the exhibition of it, appeared for many years indifferent to its fame. He engaged himself in other mechanical pursuits with equal ardor, and is said to have so far neglected this, as to have taken it partly to pieces, for the purpose of making other experiments. But the visit of the Russian grand duke Paul to the court of Joseph II. again called our automaton to life. It was repaired and put in order in a few weeks; and, from this period (1785), has been exhibited at intervals, through Germany, at Paris, and in London, first by M. de Kempelin, and latterly by a purchaser of the property from his son; De Kempelin having died in 1803.

Our chess-playing readers will be able to appreciate the bold pretensions of this automaton. The entire number of combinations which it is possible to form with the pieces of a chess-board has never, we believe, been ascertained. To push forward a plan of our own steadily, and at the same time to anticipate the designs of an antagonist, requires a constant and acute discrimination, which long experience, and some considerable strength of memory, have been required to make availing in all other cases. But this cunning infidel (for he assumes the figure of a Turk) drives kings, and castles, and knights before him with more than mortal sagacity, and with his inferior hand: he never, we believe, has been beaten; and except in a very few instances of drawn games, has beat the most skilful chess-players in Europe. Dr. Hutton, on the supposition of its being altogether a mechanical contrivance, calls it 'the greatest master-piece of mechanics that ever appeared in the world.' We shall recount his pretensions in the words of an Oxford graduate, who published Observations on them, during his last visit in London, and subjoin a statement of the best attempts that have been made to account for his apparent skill.

'The room where the automaton chess-player is at present exhibited, has an inner apartment, within which appears the figure of a Turk as large as life, dressed after the Turkish fashion, sitting behind a chest of three feet and a half in length, two feet in breadth, and two feet and a half in height, to which it is attached by the wooden seat on which it sits. The chest is placed upon four castors, and, together with the figure, may be easily moved to any part of the room. On the plain surface formed by the top of the chest, in the centre, is a raised immovable chess-board of handsome dimensions, upon which the figure has its eyes fixed; its right arm and hand being extended on the chest, and its left arm somewhat raised, as if in the attitude of holding a Turkish pipe, which originally was placed in its hand. The exhibiter begins by wheeling the chest to the entrance of the apartment within which it stands, and in face of the spectators. He then opens certain doors contrived in the chest, two in front and two at the back; at the same time pulling out a long shallow drawer at the bottom of the chest, made to contain the chess-men, a cushion for the arm of the figure to rest upon, and some counters. Two lesser doors, and a green cloth screen, contrived in the body of the figure and its lower parts, are likewise opened, and the Turkish robe which covers them is raised; so that the construction, both of the figure and chest, internally, is displayed. In this state the automaton is moved round for the examination of the spectators: and, to banish all suspicion from the most sceptical mind, that any living subject is concealed within any part of it, the exhibitor introduces a lighted candle into the body of the chest and figure, by which the interior of the chest is, in a great measure, rendered transparent, and the most secret corner is shown. Here it may be observed, that the same precaution to remove suspicion is used, if requested, at the close, as at the commencement, of a game of chess with the automaton. The chest is divided, by a partition, into two unequal chambers. That to the right of the figure is the narrowest, and occupies scarcely one-third of the body of the chest. It is filled with little wheels, levers, cylinders, and other machinery used in clock-work. That to the left contains a few wheels, some small barrels with springs, and two quarters of a circle placed horizontally. The body and lower parts of the figure contain certain tubes, which seem to be conductors to the machinery. After a sufficient time, during which each spectator may satisfy his scruples and his curiosity, the exhibiter recloses the doors of the chest and figure, and the drawer at the bottom; makes some arrangements in the body of the figure, winds up the works with a key inserted into a small opening on the side of the chest, places a cushion under the left arm of the figure, which now rests upon it, and invites any individual present to play a game of chess. At the commencement of a game, the automaton moves its head as if taking a view of the board; the same motion occurs at the close of a game. In making a move, it slowly raises its left arm from the cushion placed under it, and directs it towards the square of the piece to be moved. Its hands and fingers open on touching the piece, which it takes up, and conveys to any proposed square The arm then returns with a natural motion to the cushion upon which it usually rests. In taking a piece, the automaton makes the same motions of the arm and hand to lay hold of the piece, which it conveys from the board, and then returning to its own piece, it takes it up, and places it on the vacant square. *Observations, &c. by an Oxford Graduate*, 8vo, 1819. [His motions have an air of great dignity and composure. On giving check to the king, he moves his head as a signal. When a false move is made, as if to puzzle him, he taps with his right hand on the chest, replaces the

ongly moved, and proceeds to take the
intage of moving a piece of his own. At
ies he will tap on the chest for his ad-
o move; and at the close of the game
gracefully round to the company. It is
able, and somewhat suspicious circum-
hat neither the present proprietor of this
n (in a pamphlet circulated by him on
ct), nor the Oxford graduate, from whose
ions we have abridged the above account
erformances, takes any notice of the at-
solution of them by Mr. Collinson, a
ndent of Dr. Hutton, to whom we have
luded. In the same letter in which this
n describes the automaton inventions of
family, he speaks of a pamphlet pre-
o him at Dresden, which affirms the
henomena to be produced by human
a conjecture which is confirmed by a
the Edinburgh Encyclopædia. A well-
oy is said to be partly concealed in the
apery of our automaton's lower limbs,
y in the commode on which the chess-
placed. He cannot be seen when the
opened, we are told, 'because his legs
s are then concealed in two hollow cy-
which appear designed to support the
nd levers, the rest of the body being at
ent out of the commode, and hid in the
of the automaton. When the doors of
mode are shut, the clacks which are
the turning of a rounce, permit the
change his place, and re-enter the com-
thout being heard; and while the ma-
rolled about to different parts of the
prove that it is perfectly detached, the
as an opportunity of shutting the trap
which he has passed. The drapery of
naton is then lifted up, and the interior
he body is shown, to convince the spec-
at all is fair, and the whole terminates to
at astonishment, and in the illusion that
t is produced by simple machinery,
n only arise from a well-ordered head.'
ter proceeds to conjecture, that the chess-
semi-transparent, so as at once to con-
party within, and afford him sufficient
perceive the moves of his antagonist,
e met by an interior lever, governing the
he automaton, on the principles of the
ph.

these accounts of the chess-player very
y in his mind, and an extract of the sup-
ethod of concealing the dwarf or boy, in
ket, the writer of this paper went with
nds a short time ago, to visit, and, if possi-
lay at chess with the automaton. His
ents, however, were far too numerous
riter to obtain that honor on this occasion.
ght changes had taken place in the man-
hibiting the automaton (compared with
nt of the Oxford graduate); having,
avowed to the proprietor, that his object
btain a scientific knowledge of his pro-
, as far as it could be done with pro-
the writer took memoranda of what

a door in a canvass screen the automa-
commode were wheeled out at the time appointed, and the figure was made to face the company. Then the inferior chamber of the commode (occupying about one-third of its dimensions), was opened before and behind, when a taper was held by the proprietor in such a situation, as to throw a full light through the machinery that occupied this part of it. He now closed and locked the doors of this chamber, opened the drawer, and took out the men and cushion, as described by the Oxford graduate; after which he opened the larger chamber of the commode in front, and put the taper through the front door within it. Perhaps one-sixth, or one-eighth of this chamber was occupied by machinery; the rest was a perfect cavity, lined with green baize. He now shut and locked these doors; then wheeled the commode round, opened and took up the drapery of the figure, and exhibited the body, partly occupied by machinery, and partly left with imperfect imitations of the prominent parts, to the shoulders. The drapery was then carefully pulled down, and the figure wheeled round, so as again to front the spectators, before whom it played a masterly and successful game. The conviction of the writer and his friends (with the figure before them) was, that the concealment of a small thin boy or dwarf was barely possible. The larger chamber would contain him, and that chamber never was opened from behind, nor at the same time that the back of the figure was exposed; while it is observable that the inferior chamber had the light of a taper thrown through it. So that it appeared a practicable contrivance that a boy should be concealed in the drapery while the commode was opened, and in the commode while the figure was exposed.

Under these impressions, the writer addressed a letter to the proprietor, in which he stated, that having with his friends, been highly gratified by the wonderful powers of the automaton chess-player, and intending to communicate the result of his investigation to the public, which must, if satisfactory, prove extremely creditable to the invention,—he requested leave to visit the exhibition (accompanied by two or three scientific friends, and probably in the presence of a member of the Royal family), in order to see a game played by the figure, with the doors of the commode open; his object being merely to ascertain the impossibility of any human intervention, and not in any degree to inspect the machinery; but to this application a polite negative was returned, declining any other than the ordinary public exposure of the machine.

Since writing the above, we have seen 'An Attempt to analyse the Automaton Chess-player of M. De Kempelin,' Lon. 1821. The anonymous author is sanguine enough to add, 'With an easy method of imitating the movements of that celebrated Figure.' The solution of these movements here offered to the public, is so far similar to our own, as that the writer confidently ascribes them to the concealed presence of a living agent. Five lithographic plates illustrates his supposed mode or operation. But this tract suggests, that the operator is introduced into the body of the automaton; that he sees the chess board, while playing 'through the waistcoat, as easily as through a veil;' and that his left hand actually fills the sleeve of the figure, moving the fingers 'with a string.' (Surely, to make this sort of agency complete, the chess-player might have been furnished with gloves!)

The author ingeniously finds a space at the back of the drawer, not heretofore noticed, which would receive the legs of a concealed person. He also makes some pertinent remarks on the illusion which is probably practised on the spectator in the winding up of the machinery, the ticking of clock-work that is heard, &c. We still imagine, however, that the dimensions of the chest would afford no room for the concealment of a figure that could thus direct the arm, and are certain no such figure could rise out of it into that part of the body supposed, as we saw it displayed in London. A youth coiled up in the commode would much more 'easily' play the game. The whole chest is but two feet and a half high, three feet long, and two feet in breadth. On the whole, we must leave the question of human agency still undecided, and pass on to the mention of another of M. de Kempelin's ingenious inventions.

'On what do you think M. de Kempelin is at present employed?' says M. de Wendisch, in a letter to a friend on the pursuits of that gentleman, in 1783—'on a machine that talks!' Acknowledge that he must be gifted with a creative genius bold and invincible, to undertake a project of this kind; and will it be believed that he has every reason to hope for complete success? He has already succeeded so far as to prove the possibility of such a machine, and to deserve on the part of the learned, that they should dedicate their attention to this new and hitherto unknown invention. His machine answers, clearly and distinctly enough, several questions. The voice is sweet and agreeable; there is but the letter R which it pronounces lispingly, and with a certain harshness. When its answer is not understood, it repeats it slower; and if required to speak a third time, it repeats it again, but in a tone of impatience and vexation. I have heard it pronounce in different languages, very well and very distinctly, the following words and phrases:—'Papa,' 'Mama,' 'My wife,' 'My husband,' 'A-propos,' 'Marianne,' 'Rome,' 'Madam,' 'The queen,' 'The king,' 'At Paris,' 'Come,' 'Mama loves me,' 'My wife is my friend.'' This writer then speaks of the machine being at that time nothing more than a square box, to which was affixed a pair of organ-bellows; and that, at each answer of this non-descript speaker, the inventor put his hand under a curtain that covered it, to touch, apparently, the springs that produced the articulation. It appears to have been M. Kempelin's design to give to this automaton the form of a child of five or six years of age, as the voice which he produced was that of this period of life. He, however, exhibited it in an unfinished state; and we have not been able to learn to what figure it was finally adapted. The narrative of his proceedings in accomplishing what he did effect, and which we abridge from a curious treatise of his, 'On the Mechanism of Speech,' appears to us to be amongst the most interesting and useful of all the automatical details. Our modern removers of impediments in speech may work wonders, perhaps, by looking into his artificial jaws!

The first object of M. Kempelin, though upon what ground he reasoned we cannot imagine, was the production of the vowel sounds, rather than those of any of the consonant, which he hardly expected to be able to combine with them. He investigated the affinity between the sound of various instruments and the human voice; and between the use of the artificial reed-stop, or voce humana (which has sometimes been applied to the natural organs), and the general functions of the glottis. To the honor of our northern countrymen, after exhausting his patience on qualifying and combining bassoon, with clarionet reeds, those of hautboys, &c. he found the reed of the Highland bagpipe to furnish the best practical basis of his attempts, and sounds approximating the nearest to the harmony divine of human speech! He now conceived that the fundamental powers of the voice were in A, the sound of which vowel he easily produced by combining the reed with a tube and a pair of organ-bellows; but beyond this he could not proceed, until it occurred to him that the organ of developing the sounds desired, demanded his principal attention. He divided, therefore, a deep elliptical box into two parts, which shut upon each other with a hinge, in the manner of the human jaws, connecting his tube with the back of it, and carefully varying their opening and manner of action, until he could command the sounds of O OU, and E. Year after year was devoted to this instrument, we are told; but I, or the German U, refused to obey his call. K, L, M, and P, however, rewarded his efforts; when he attempted to form the letters he had obtained, into syllabic combinations and words. Here an almost insuperable difficulty occurred; the sounds of the letters would not flow into each other without a clatter or pause. If too slowly enunciated, they would seem like a child repeating his alphabet, and have no resemblance to the word intended; and if the tube was too rapidly supplied, it would produce a catching gust of air in the mouth, which interrupted every letter with the sound of K. An aspirating sound following that of the consonants, was also very troublesome to overcome. In the beginning of the third year of his labor, he could execute, pretty accurately the words Papa, Mama, Aura, Lama, Mulo. The sounds of most of the other consonants were ultimately obtained. P, K, and T, required the greatest quantity of air, we are told; and the whole machine about six times the quantity of the human lungs. But the two latter consonants, with D and G, were always imperfectly articulated. Some of his best sentences were, Romanorum Imperator semper Augustus. Leopoldus Secundus. Vous êtes mon ami. Je vous aime de tout mon cœur. M. de Kempelin finally perfected, 1. Nostrils, which he found of great importance in articulation, and which consisted of two tin tubes, communicating at bottom with the mouth. 2. The mouth, made of elastic gum, and of a bell form, so contrived that the sounds of the reed issued immediately from it,

ected with the air-chest by a tin tube,
pt it always full of air. 3. The air-
hich was of an oblong shape, and
at one end the voice-pipe containing
and at the other the bellows-pipe, both
und with leather. In this chest were
two inferior ones, each having a valve
closed by a spring, and a round aper-
ted to receive through the side of the
est a tin funnel, and a round wooden
ch produced the hissing sounds of C H,
Z. The voice-pipe entered the larger
ween the two smaller ones. 4. The bel-
wering the purpose of lungs, and which
the ordinary manner of those belonging
gan. 5. The reed, which was in imi-
a bagpipe drone, the hollow portion
uare, and the tongue of it formed of thin
brating horizontally, to produce the
ounds. The square end was inserted,
ve noticed, in the air-chest. Along the
le of the tongue was a movable spring,
ghtly bent it inward; and the part on
fell was covered with leather, to modu-
ibrations. The sounds were more acute
ring acted toward the outer extremity of
ue, which was then more rapid in its
as it was withdrawn from this part, the
were slower, and the sounds more grave.

ume of M. Maillardet, a Swiss artist, of
celebrity, is the only one that merits as-
with that of De Kempelin. He has
two or three celebrated figures. One
is a lady at her piano-forte. She exe-
hteen tunes by the actual pressure of
rs on the keys; and while all the natu-
are thus performed, her feet play the
sharps by means of pedals. The in-
, in fact, may be correctly called an
it is mainly moved by bellows; to bring
to proper action is the one important
the machinery. The whole is impelled
ong springs, acting on twenty-five com-
ng levers, and regulated and equalised
s fly. The interior of the instrument is,
, very complicated and minute in its
m, which requires to be wound up once
Before commencing a tune, the lady
head to the auditors; she is apparent-
d with an anxiety and diffidence, not
lt in real life; her eyes then seem intent
otes, her bosom heaves, and at a dis-
s impossible to discover any semblance
k of art.

cian, that has sometimes accompanied
cal lady, is also a considerable triumph
anical skill. He sits at the bottom of a
h a long wand in his right hand, and a
his left. Questions inscribed on thin
nters, twenty in number, are put into
tator's hand, who is desired to enclose
ore of them in a drawer, which shuts
pring. A medallion, for instance, has
ion, What is the most universal pas-
ich being put into the drawer, the figure
a solemn gait, bows his head, draws a
two with his wand, consults his book,
it towards his face, as if in meditation.
strikes with his wand on the wall above
his hand, when two folding-doors open, and discover the inscription Love, as the reply. The counters are remarkably thin, and similar in all other respects but their inscriptions, which some of them bear on both sides: certainly the mechanism that can discriminate the one from the other, must be exquisite; and mechanism alone, we have the highest authority for believing it is.

M. Maillardet's Writing-boy is hardly less meritorious. He is exhibited kneeling on one knee, and an attendant having dipped his pencil and laid the paper before him, he executes drawings, and French and English sentences, in writing, of a very superior description. Every natural motion of the fingers, elbow, eyes, &c. is correctly imitated. The first of these figures the artist stated to have cost him the sum of £1500 in its construction.

The last machine of this kind which we shall notice is the engine invented by Mr. Babbage, capable of computing any table by the method of differences, whether they are positive or negative, or of both kinds. The greater the number of differences, the more will this engine outstrip the most rapid calculator; and by the application of certain parts of no great complexity, the roots of equations, and consequently the roots of numbers may be extracted.

One machine of this kind this gentleman has executed. Drawings and plans of a second have been made by him to multiply any number of figures by any other number; of a third, to make tables of prime numbers from 0 to ten millions; and of a fourth, to construct tables which have no order of differences constant. This last engine will calculate tables governed by laws which have not been hitherto shown to be explicitly determinable; and will solve equations, for which analytical methods of solution have not yet been contrived. Thus one of the greatest difficulties with which calculators are beset, arising from the errors of copyists, and of the press, is obviated. In Mr. Babbage's engine, the machine itself takes from several boxes, containing types, the numbers which it calculates: thus becoming at the same time computer and compositor; and preventing all error both in copying and in printing. It is worked by the hand, and it would be very easy, if any advantage were to be gained by such a method, to apply to it a self-moving power.

We have now placed before the reader as complete an account of the most celebrated automata as the limits of our publication will admit. We believe no remarkable contrivance of this kind has escaped our notice; and is it too much to ask him for one serious reflection, at the close, upon the wisdom of that Almighty Architect, by whom we are so fearfully, so wonderfully, so inimitably made? Without any speculation on the possible powers of man, or the tendency of his habits and impulses on a large and hypothetical scale, let the entire muscular action of a single youthful arm, in striking a shuttlecock, be perfectly imitated by him, and we could consent to resign to the artist the government of our share of the world!

AUTOMENES, one of the Heraclidæ, king of Corinth At his death, A. A. C. 779 annual magistrates were chosen at Corinth, who were called Prytanes; and by them the Corinthians were governed for ninety years, till Cypselus and his son Periander assumed absolute power.

AUTOMEDON, in entomology, a species of papilio.

AUTOMOLI, a nation of Ethiopia, mentioned by Herodotus.

AUTOMOLITE, in mineralogy, a substance which, from its crystalline form, was considered to be a variety of spinelle, containing a portion of oxide of zinc. But a later and more accurate analysis has shown it to be an aluminate of zinc. It has hitherto been found only in Sweden, in small octahedral crystals, imbedded in talc.

AUTONINE (Bernard), a French lawyer, was advocate to the parliament of Bourdeaux. He was author of, 1. A Comparison of the French and Roman Law; 2. A Commentary on the Provincial Law of Bourdeaux; 3. Censura Gallica in Jus Civile Romanum.

AUTONOE, in fabulous history, a daughter of Cadmus, who married Aristeus, by whom she had Actæon, frequently called Autoneius Heros. Actæon became a famous huntsman, but happening to look at Diana and her attendants bathing near Gargaphia, he was changed into a stag, and devoured by dogs; which was so afflicting to Autonoe, that she retired from Bœotia to Megara, and soon after died.

AUTONOMIA; from *αυτος*, and *νομος*, law; a power of being governed by our own laws and magistrates. The liberty of the cities which lived under the faith and protection of the Romans, consisted in their autonomia, i. e. they were allowed to make their own laws, and elect their own magistrates; by whom justice was to be administered, and not by Roman presidents or judges, as was done in other places, which were not indulged with the autonomia.

AUTOPHOROS; from *αυτος* and *φερω*, to bear, i. e. self-bearing; an epithet applied to a thief taken in the act with the stolen goods upon him.

AUTOPHOSPHORUS is, by some, used to denote phosphorus, on account of its kindling of itself.

AUTOPRACTI; from *αυτος*, and *πραττω*, I exact; in the civil law, persons indulged with this privilege, that they should not be compelled to pay taxes, but should be left to their own free will. Of this number were men of distinguished dignity, and those eminent for their probity and honor.

AUTOPSY. From *αυτος* and *οψις*, a man's own sight, as distinct from that of others. Not in use.

> In those that have forked tails, *autopsy* convinceth us, that it hath this use. *Ray on the Creation.*

AUTOPYRITES, Autopyros; from *αυτος*, and *πυρος*, wheat; in the ancient diet a species of bread, wherein the whole substance of the wheat was retained, without retrenching any part of the bran. Galen describes it otherwise, viz. as bread where only the coarser bran was taken out. And thus it was a medium between the finest bread, called similagineus, and the coarsest called furfuraceus. This was also called the syncomistus.

AUTOTHEISM, the doctrine of
existence.

AUTOUR, in natural history, a
which resembles cinnamon, but i
thicker; it is the color of a broken
full of spangles. It comes from the
is an ingredient in the carmine dy
ornithology, the name under which
scribes the goshawk, or falco pal
Linnæus.

AUTREAU (James d'), a Fren
painter, who died in great poverty, i
tal of incurables in Paris, in 1745.
tic works were published in 4 vols.
He had little merit as a painter.

AUTRICUM, in ancient geogr
capital of the Carnutæ, in Gallia Ce
wards called Carnotena, Carnotenas,
Carnotenum; now Chartres; and,
cient name of Auxerre.

AUTUMN, } Perhaps from
Autum'nal, } *tum*, from the augr
Autum'nity. } of nature.

> For I will board her though she chi
> As thunder, when the clouds in *autum*
>
> Thy grandsire's words savour'd of thr
> Or manly garlicke: but thy furnace reel
> Hote steams of wine; and can aloofe de
> The drunken draughts of sweete *autumni*
> *Bp. Hall's Sa*
>
> Thou shalt not lon
> Rule in the clouds; like an *autum*
> Or lightning, thou shalt fall.
>
> No spring or summer's beauty hath s
> As I have seen in one *autumnal* face.
>
> Bind now up your *autumnal* flower
> sudden gusts, which will prostrate all.
>
> Not the fair fruit that on yon branche
> With that ripe red th' *autumnal* sun best
>
> When men once reach their *autumn*,
> Fall off apace, as yellow leaves from tre
> Till left quite naked of their happiness,
> In the chill blasts of winter they expire.
>
> *Autumn*, nodding o'er the yellow
> Comes jovial on.
>
> I would not be over-confident, till h
> a spring or *autumn*. *Wisem*
>
> The starving brood
> Void of sufficient sustenance, will y
> A slender *autumn*.
>
> The evening is an emblem of *autumn*,
> of declining life.

Autumn begins when the sun e
When it ends, winter begins. Sev
have computed their years by autum
glo-Saxons by winters. Tacitus tell
mans were acquainted with all the o
of the year, but had no notion of au
ancient Jews began their civil year
reckoning that all the fruits of the e
perfection at the creation. The Fre
regarding the principle, adopted the
their late revolutionary calendar; of
first month, Vendemiare, commenc
equinox. Thus faith and modern ph
one instance, produced the same effe
has been reputed an unhealthy season
calls it 'tentator valetudinum;' and
speaks of it in the same light:

> 'Autumnus Libitinæ quæstus ac

is commonly represented by painters
e figure of a female crowned with vine
, and bunches of grapes; naked in that
ch respects summer, and clothed in that
orresponds to winter. Its garment is
with flowers, like that of Bacchus.

MN, in alchemy, the season when the
i of the philosopher's stone is brought
tion.

MNAL Equinox, the time when the sun
e autumnal point.

MNAL Point is that part of the equinox
ch the sun begins to descend towards
pole.

MNAL Signs, in astronomy, are the signs
corpio, and Sagittarius, through which
asses during the autumn.

MNALIA, the fruits of the earth that
autumn.

UMNALIS, in ornithology, a species of
, called also psittacus Americanus, and
ête bleue, by Buffon. It is the lesser
rrot of Edwards, and autumnal parrot of
It is distinguished by being of a green
th the front and spot on the quill-fea-
rlet; crown and primary quill-feathers,
f this kind there are two varieties. Also
of anas, or duck, that inhabits South
And a species of fringilla, called by
he autumnal finch.

MNUS, in entomology, the name given
ral to the moth, or phalæna, called by
P. fagana: which see.

N, an ancient city of France, in the de-
of the Saone and Loire, formerly the
the Autunois district, and now of an
ement, with nine cantons, and 67,000
ts. Before the revolution the intend-
rgundy resided here, and it was the see
op, suffragan of Lyons. The Arroux
s walls, whose ruins are so firm, and the
closely united, that they seem almost to
t of the solid rock. Among the anti-
this city are the ruins of three ancient
one of which was dedicated to Janus,
her to Diana; two antique gates of con-
beauty, with a theatre and a pyramid;
t is probably a tomb. In the church of
ns is the tomb of the sanguinary Brune-
o is said to have poisoned her son Chil-
nd to have procured the death of ten
nd who met her death by being tied to
f a wild mare, by order of her grandson,
. The present bishop ranks under the
tan of Besançon, and exercises jurisdic-
the departments of the Saone and Loire,
ievre. Autun consists of the upper
castle, and the lower town. It is to-
ell built, contained before the revolu-
parish churches, five abbeys, with five
gious houses, and about 8000 inhabi-
he natives manufacture delft wares,
overlets, blankets, and tapestry. The
at the foot of three great mountains,
eagues south-west of Dijon, and forty-
-east of Paris.

NOIS, a ci-devant district of France,
dy, now comprehended in the depart-
aone and Loire. See Autun.

AUTURA, or Audura, a river of Gallia Celtica, now called Eure. It falls into the Seine, on the south side.

AUVAIL, a town of Germany, in the circle of Westphalia.

AUVERGNE, a ci-devant province of France, about 100 miles in length, and seventy-five in breadth; the capital of which was Clermont. It was bounded on the north by the Bourbonnois; on the east by Forez and Velay; on the west by Limosin, Quercy and La Marche; and on the south by Rovergue and the Cevennes: and was divided into upper and lower; the latter, otherwise called Limagne, being one of the finest countries in the world. The mountains of Upper Auvergne though not fruitful, afford good pasture, which feeds great numbers of cattle, the chief riches of that country. It now forms the two departments of Cantal and Puy-de-Dome, except some small districts annexed to those of Creuse Allier, and the Upper Loire. Auvergne is conspicuous in the various revolutions experienced by France, and anciently maintained a pre-eminence among the independent states of Gaul. Its inhabitants boasted a singular trophy in the sword of Cæsar, which he lost before the walls of Gergovia. But they maintained a faithful alliance with the Romans after they became subject to them.

AUVERGNIE, a town of Switzerland, in the canton of Neufchatel, three miles south of that place.

AUVERS, a town of France, on the righ bank of the Oise, in the department of the Seine and Oise, arrondissement of Pontoise. Also a town in the west of France, in the arrondissement of Le Mans, and department of the Sarthe.

AUVILLARS, or Auvillard, a town of France, in Lower Armagnac, Gascony, in the department of the Tarn and Garonne. It is the head of a canton, and contains manufactures of woollen stockings, and upwards of 2000 inhabitants. It stands on the Garonne, which here forms a small harbour. Five leagues south of Agen.

AUVERNAS, a very deep-colored heady wine, made of black raisins, so called at Orleans; but it is not fit to drink before it is above a year old; but if kept two or three years, it becomes excellent.

AUVIGNY (N. Castressd'), a French historian of the eighteenth century. He was both a writer and a soldier, and lost his life at the battle of Dettingen, in 1743, at the age of thirty-one. His writings are, 1. Memoirs of Madam Barneveldt, 2 vols. 12mo. 2. Histories of Rome and France abridged for young persons. 3. History of Paris, 4 vols. 12mo. 4. Lives of illustrious Frenchmen, 8 vols. 12mo.

AVULS'ED, } *Avello, avulsum*, I tear or
Avuls'ion. } pull away. Torn or pulled away.

> Spare not the little offsprings, if they grow
> Redundant; but the thronging clusters thin
> By kind *avulsion*. *Philips.*

> The pressure of any ambient fluid can be no intelligible cause of the cohesion of matter; though such a pressure may hinder the *avulsion* of two polished superficies one from another, in a line perpendicular to them. *Locke.*

Ye towering minds! ye sublimated souls!
Who scatter wealth, as though the radiant crop
Glitter'd on every bough; and every bough,
Like that the Trojan gather'd, once *avuls'd*
Were by a splendid successor applied
Instant, spontaneous! listen to my lays.
Shenstone's Economy.

AUX, in astronomy, see Auges. Some use aux to denote the arch of the ecliptic, intercepted between the first point of Aries, and the point wherein the sun, or a planet, is at its greatest distance from the earth.

AUXENTIUS, bishop of Milan, in the fourth century. He was a native of Cappadocia, and of Arian principles. Constantius gave him the bishopric of Milan; and though excommunicated by a council held at Rome, in 368, he held his see to his death, in 374.

Auxentius, another of the Arian party, who challenged St. Ambrose to a public disputation, which was wisely declined by that great prelate.

AUXERRE, an ancient town of France, the capital of the department of Yonne, formerly the capital of the Auxerrois, in Burgundy. The palace of the ci-devant bishop is one of the finest in France, and the churches are very beautiful. It is advantageously situated for trade with Paris, on a hill on the banks of the river Yonne, eleven leagues S. S. E. of Sens, and thirty-seven south-east of Paris. Its principal trade is in wood, and the excellent wares of the neighbourhood. Here is also a manufacture of woollen stuffs. Population about 12,000.

AUXERROIS, a ci-devant territory of France, in Burgundy, of which Auxerre was the capital. It now forms the greater part of the arrondissement of Auxerre, in the department of the Yonne.

AUXESIS, in mythology, a goddess worshipped by the inhabitants of Egina, and mentioned by Herodotus and Pausanias.

AUXILI'AR,
Auxili'ary, *n.* & *adj.*
Auxili'atory.
} Lat. *auxilium*, strength; one who gives or lends us additional strength. An aider, assister, or supporter.

The giant brood,
That fought at Thebes and Ilium on each side,
Mix'd with *auxiliar* gods. *Milton's Paradise Lost.*

Their tractates are little *auxiliary* unto ours, nor afford us any light to detenebrate this truth.
Brown's Vulgar Errours.

There is not the smallest capillary vein but it is present with, and *auxiliary* to it, according to its use.
Hale's Origin of Mankind.

Nor from his patrimonial heaven alone,
Is Jove content to pour his vengeance down,
Aid from his brother of the seas he craves
To help him with *auxiliary* waves. *Dryden. Ovid.*

They had both kept good company, rattled in chariots, glittered in play-houses, and danced at court, and were both expert in the games that were in their times called in as *auxiliaries* against the intrusion of thought. *Rambler.*

Auxiliary Verb. A verb that helps to conjugate other verbs. In almost all languages, some of the commonest nouns and verbs have many irregularities; such are the common auxiliary verbs, *to be*, and *to have*, *to do*, and *to be done*, &c.

Auxiliary Verbs, in grammar, are
to other verbs, to form their moods an
In the English language, the auxiliary
supplies the want of passive verbs.
modern languages make use of auxilia
because their verbs do not change their
tions as those of the Latin and Greek,
the different tenses or times of being
or suffering; nor the different moods
ners of their signifying: so that, to su
defect, recourse is had to different
verbs. See Grammar.

AUXILIUM, in law. See Aid.

Auxilium, ad Filium Militem Fac
vel filiam maritandam, was a writ direct
sheriff of every county, where the king
lord had any tenants, to levy them re
aid, towards the knighting of his eldest
the marriage of his eldest daughter.

Auxilium Curlæ, signifies an order
for the summoning of one party at th
another.

AUXO, in mythology, the name of o
two graces worshipped by the Athenia
Hegemone.

AUXOIS, a small ci-devant terr
France, in Burgundy, of which Semur
capital. It is now in the department
d'Or.

AUXON, a town of France, in Cha
department of the Aube, with 2340 inh
5½ leagues S. S. W. of Troyes. Also a
Upper Auvergne, department of the
Loire, near the Allier, with 1500 inh
and the title of barony. It carries on
in corn, wine, and cloth. 12½ league
west of Le Puy.

AUXONNE, the capital of a count
same name in France, in the province
gundy, on the left bank of the Saone.
gularly fortified, and contains manufa
serge and other cloths.

AUXY, the French name of a s
wool, spun in the neighbourhood of A
by workmen, called houpiers. It is
and beautiful, and used to make the fin
ings.

AW, a river of Scotland, in Argyllshi
a town of Germany in the electorate of

Aw, or Loch-aw, a beautiful and
lake in Argyllshire, in the parish of G
The whimsical tradition respecting the
this lake is recorded by Ossian. The
of it is, that 'to Bera the aged, was c
the charge of that awful spring, which
pointed by fate to destroy the inherit
race of her fathers. This event, she w
vent, or at least to protract, by cov
spring before sun-set, with a stone,
the sacred and mysterious characters
graved. One night this was forgot. The
waters of the mountain burst forth, and
all before them, covered that large exp
known by the name of the Lake of A
Stewart, minister of Stachur, explains
by the etymology of Bera; Beir, in t
signifying a thunderbolt. This lake
thirty miles long, but not above thre
broad upon an average, though in son

res two miles. It abounds with salmon, s, &c. The name is often spelt and pronounced Loch-ow.

, a town of Persia, in the province of hty miles south of Casbin.

a town of Japan, and capital of a pro- the south coast of the island of Xicoco. own of Japan, and capital of a province south coast of the island of Niphon, ve miles south of Jeddo. Long. 140° t. 34° 24′ N.—A town of Japan, in the Ximo, sixty-two miles north of Nan-

HAZARI, a town of Asiatic Turkey, mania, fifteen miles N. N. W. of Ala-

IT, *v.* & *n.*
T'ER, *n.*
T'ING.

Dutch, *wacken*; Ang.-Sax. Wæccean, to wake or watch. To be watchful, to keep upon the look out; to be in ce, in expectation.

> s the wretch condemn'd to lose his life,
> e falling of the murdering knife. *Fairfax*

> least mishap the most bliss alter may:
> ousand perils lie in close *await*,
> us daily, to work our decay. *Spenser.*

> c'd in view, they stand, a horrid front
> ful length, and dazzling arms, in guise
> rs old with order'd spear and shield,
> what command their mighty chief
> pose. *Milton. Paradise Lost*, book i.

> less resolv'd, Antenor's valiant heir,
> ts Achilles, and *awaits* the war. *Pope.*

> 's feeble race what ills *await!*
> and penury, the racks of pain,
> e, and sorrow's weeping train,
> eath, sad refuge from the storm of fate.
> *Collins.*

> boast of heraldry, the pomp of power,
> l that beauty, all that wealth e'er gave,
> alike the inevitable hour,
> ths of glory, lead but to the grave. *Gray.*

'KE, *v.* & *adj.*
KES,
KENER,
KENING.

See Await. To rouse from inaction of any kind; from sleep; to make alive.

> CH. I had forgot myself: am I not king?
> hou coward majesty, thou sleepest;
> king's name forty thousand names?
> *Shakspeare. King Richard II.*

> cheerful lark, mounting from early bed,
> weet salutes *awakes* the drowsy light,
> rth she left, and up to heaven is fled,
> chaunts her Maker's praises out of sight.
> *Fletcher.*

> s men need neither clock nor bell to *awaken* eir desires make them restless.
> *Hall's Contemplations.*

> night! the season when the happy take
> , and only wretches are *awake*;
> contented ghosts begin their rounds,
> ain'd buildings and unwholesome grounds.
> *Otway.*

> And see!
> ne! the glorious morn! the second birth
> ven and earth! *awakening* nature hears
> e creating world, and starts to life,
> y heightened form, from pain and death
> r free. *Thomson.*

> See Truth, Love, and Mercy, in triumph descending,
> And nature all glowing in Eden's first bloom!
> On the cold cheek of Death smiles and roses are blending,
> And Beauty immortal *awakes* from the tomb.
> *Beattie's Hermit.*

AWAR'D, *v.* & *n.*
Awar'der.

According to Tooke from the French *à garde*-to keep; with a verb preceding, understood as to determine who is [to keep;] to adjudge.

> A pound of that same merchant's flesh is thine;
> The court *awards* it, and the law doth give it.
> *Shakspeare.*

It advances that grand business, and according to which their eternity hereafter will be *awarded*. *Decay of Piety.*

A church which allows salvation to none without it, and *awards* damnation to almost any within it. *South.*

Satisfaction for every affront cannot be *awarded* by stated laws. *Collier on Duelling.*

> Now hear th' *award*, and happy may it prove
> To her, and him who best deserves her love.
> *Dryden.*

Affection bribes the judgment, and we cannot expect an equitable *award*, where the judge is made a party. *Glanville.*

> To urge the foe,
> Prompted by blind revenge and wild despair,
> Were to refuse th' *awards* of Providence.
> *Addison's Cato.*

> Th' unwise *award* to lodge it in the tow'rs,
> An off'ring sacred. *Pope. Odyssey.*

Award, in law, is the arbitrator's final adjudication, of matters referred to him. References are sometime made spontaneously by the parties themselves, to avoid the expense and delay of legal proceedings; and sometimes by order of the court before which a cause is pending. In the former case, the parties enter into bonds to abide by the decision; in the latter an order or rule of the court is made, that the matter in issue shall be determined by the award. Law as well as facts are within the province of the arbitration. But if in the award (which is in writing and under seal) the arbitrator states the legal grounds on which he has decided, and those grounds appear to the court to be wrong, the award may be set aside. If he merely makes his order without assigning his reasons, the award must be abided by, though he may have been mistaken in point of law. And the courts will set aside an award, if the arbitrator can be shown to have made it from corrupt motives.

AWA'RE, *v.* & *n.*
Awar'n.

Sax. waerd. Germ. *gewärht*, from *wahren*, to see. To be on the look out, to be cautious, to take care, to be provident.

> So warn'd he them *aware* themselves; and
> Instant, without disturb, they took alarm.
> *Paradise Lost.*

Ere I was *aware*, I had left myself nothing but the name of a king. *Sidney.*

Ere sorrow was *aware*, they made his thoughts bear away something else besides his own sorrow. *Id. Arcadia.*

Temptations of prosperity insinuate themselves; so that we are but little *aware* of them, and less able to withstand them. *Atterbury.*

The first steps in the breach of a man's integrity are more important than men are *aware* of. *Steele.*

AWASI, or **Awadsi**, an island of Japan, near the south coast of Niphon, about sixty miles in circumference. Long. 133° 44′ E., lat. 34° 30′ N. Also, a town of Japan, and capital of an island of the same name. Long. 133° 43′ E., lat. 34° 30′ N.

AWASIMA, a small island of Japan, seven miles east of Sado.

AWATCHA, in ornithology, a species of motacilla that inhabits Kamtschatka. It is of a brown color; the chin and breast white, spotted with black; middle of the belly and lores white; primary quill-feathers bordered with white; tail-feathers orange at the base. Art. Zool.—Gmelin.

AWATSKA Bay, a harbour of Kamtschatka; which is said to be the safest and most extensive yet discovered in that part of the world; and the only one that can admit vessels of large burden. The entrance to it is in long. 158° 48′ E., and lat. 52° 51′ N.

AWAY′,
Away′ward. } Ang.-Sax. wagean, to wag or move; Ang.-Sax. weg, or waeg; Eng. way. Away is the imperative mood, or past participle.

A man's life is not to be trifled *away*: it is to be offered up and sacrificed to honourable services, public merits, good causes, and noble adventures.
Bacon's Essays.

I had my feather shot sheer *away*.
Beaum. & Fletch. Knight of the burning Pestle.

They could make
Love to your dress, although your face were *away*.
Ben Johnson's Catiline.

It is impossible to know properties that are so annexed to it, that any of them being *away*, that essence is not there. *Locke.*

So if by chance the eagle's noble offspring,
Ta'en in the nest, become's some peasant's prize,
Compell'd awhile to bear his cage and chains
And like a pris'ner with the clown remains
But when his plumes shoot forth and pinions swell
He quits the rustic and his homely cell;
Breaks from his bonds, and in the face of day
Full in the sun's bright beams he soars *away*:
Delights thro' heav'n's wide pathless ways to go,
Plays with Jove's shafts and grasps his dreadful bow.
Rowe's Royal Convert, act iv.

But ah! thou knows't not in what youthful play
Our nights beguil'd with pleasure swam *away*;
Gay songs and cheerful tales deceived the time,
And circling goblets made a tuneful chime;
Sweet was the draught, and sweet the blooming maid,
Who touch'd her lyre beneath the fragrant shade.
Sir W. Jones.

There seems a floating whisper on the hill,
But that is fancy, for the starlight dews,
All silently their tears of love instil,
Weeping themselves *away*, till they infuse
Deep into Nature's breast the spirit of her hues.
Lord Byron's Childe Harolde.

Awe′, *v.* & *n.*
Awe′ful,
Awe′fully,
Awe′fulness,
Awe′less,
Awe′ful-eyed,
Awe-commanding,
Awe-struck. } Goth. agyan, to fear, or dread. To cause fear, terror, or reverence.

His coward lips did from their colour fly,
And that same eye, whose bend does *awe* the world,
Did lose its lustre. *Shakspeare.*

Know, then, that some of us are gentle
Such as the fury of ungovern'd youth
Thrust from the company of *awful* men.

So *awful*, that with honour thou may'st
Thy mate; who sees, when thou art seen
Milton

I approach thee thus, and gaze
Insatiate; I thus single; nor have fear'
Thy *awful* brow, more *awful* thus retir'd
Fairest resemblance of thy Maker fair.

A parish priest was of the pilgrim tra
An *awful*, reverend, and religious man,
His eyes diffused a venerable grace,
And charity itself was in his face.

Hail! rev'rend priest! To Phœbus' *aw*
A suppliant I, from great Atrides come,
Unransom'd here receive the spotless fair,
Accept the hecatomb the Greeks prepare.

In those deep solitudes, and *awful* cel
Where heav'nly-pensive contemplation
And ever-musing melancholy reigns.
Id. Eloisa

In winter, *awful* thou! with clouds and
Around thee thrown, tempest o'er tempest
Majestic darkness! on the whirlwind's win
Riding sublime, thou bidst the world ador
And humblest nature with thy northern bla

Serene, though *awful*, on her brow the l
Of heavenly wisdom shone; nor rove
Save to the shadowy cliff's majestic heig
Or the blue concave of th' involving

It were endless to enumerate all the pas in the sacred and profane writers, which es general sentiment of mankind concerning rable union of a sacred and reverential *aw* ideas of the divinity.

A-WEIGH, the state of an anchor drawn out of the ground in a perp direction.

AWERI, or **Overo**, a kingdom of pendent on Benin, with a town of the s on the river Formosa.

AWE′ARY. On weary. See Wea

Saf. Go thy waies, I begin to be *awear* and I tell thee so before; because I would with thee.
Shakspeare. All's Well that

AWHA′PED. From Ang.-Sax. w be amazed, or astonished, terrified, co

Ah! my dear gossip, answer'd then the
Deeply do your sad words my wits *awhape*,
Both for because your grief doth great appe
And eke because myself am touched near.
Hubb

AWHEELS. On Wheels.

And will they not cry then the world runs
Ben Jonson's Mas

AWHILE′. A time; Ang.-Sax. h hwiol, a turn), walk a while, take a tu While.

Stay, stay, I say:
And if you love me, as you say you d
Let me persuade you to forbear *awhile*.

Into this wild abyss the wary fiend
Stood on the brink of hell, and look'd
Pond'ring his voyage. *Milton's Pa*

Here, lonely wandering, o'er the sylvan
I come to pass the meditative hour;
To bid *awhile* the strife of passion cease,
And woo the calms of solitude and peace.
Kirke Wh

But thon, with spirit frail and light,
Wilt shine *awhile* and pass away,
As glow-worms sparkle through the night,
But dare not stand the test of day.
Lord Byron.

AWHIT'. A whit, or o whit, Ang.-Sax. hwit. See Whit.

These farre exceede the haggarde hauke
That stoppeth to no stale :
Nor forceth on the lure *awhit,*
But mounts with eu'ry gale?
Turberville. Epitaphes, &c.

AWK', Awk'ly, Awk'ward, Awk'wardly, Awk'wardness. } Perhaps awk is a corruption of averricht. The termination, ward, is from keered, past participle of keeren, Ang.-Sax. cyrran, to turn. Deviating from the right path or line, indirect, clumsy, inelegant.

Proud Italy,
Whose manners still our tardy apish nation
Limps after in base *awkward* imitation.
Shakspeare.

Their own language is worthy their care; and they are judged of by their handsome or *awkward* way of expressing themselves in it. *Locke.*

An *awkward* shame, or fear of ill usage, has a share in this conduct. *Swift.*

Slow to resolve, but in performance quick;
So true, that he was *awkward* at a trick. *Dryden.*

It is an *awkward* thing for a man to print in defence of his own work against a chimæra: you know not who or what you fight against. *Pope.*

What's a fine person, or a beauteous face,
Unless deportment gives them decent grace?
Bless'd with all other requisites to please,
Some want the striking elegance of ease;
The curious eye their *awkward* movement tires;
They seem like puppets led about by wires.
Churchill.

AWK, in ornithology. See Alca.

AWL'. Ger. ahl. A sharp pointed tool. In the chroniclers used for a weapon of war.

His *awle* and lingell in a thong,
His tar-boxe on his broad belt hong,
His breech of coyntrie blew.
Drayton.

Thou art a cobler, art thou?
Truly, sir, all that I live by is the *awle.*
Shakspeare. Julius Cæsar, fol. 109.

Awls, among shoemakers, are usually a little flat and bended in the blade, and the point ground to an acute angle.

AWLAN, a small imperial town of Germany, in the circle of Suabia, seated on the river Kocher, fifteen miles west of Oeting and twelve north of Heidenheim.

AWME, or Aume, a Dutch measure of capacity for liquids, containing eight steckans, or twenty verges or verteels; answering to what in England is called a tierce, or one-sixth of a ton of France, or one-seventh of an English ton. Arbuthnot.

AWN, in botany. See Arista.

Awn of wine, 360 pounds.

AWNING. A cover spread over a boat or vessel, to keep off the weather.—Awnings are made of canvas. The length of the main-deck awning, says Mr. Clerke, is from the centre of the fore-mast to the centre of the main-mast; the width corresponds to the breadths of the ship, taken at the main-mast, fore-mast, and at the mid-way between. The length of the quarter-deck awning is from the centre of the main-mast to the centre of the mizen-mast; and the width answers to the breadths of the ship, at the main-mast, mizen-mast, and at the mid-way between. The length of the poop, or after-awning, is from the centre of the mizen-mast to the ensign-staff, about seven feet above the deck; and the width is formed agreeably to the breadths of the ship, taken at the mizen-mast, the taffarel, and at the mid-way between. The canvas is cut to the given breadths of the awning, allowing about nine inches to hang down on each side, which is sometimes scolloped and bound with green baize, and is sewed together with an inch-seam, and tabled all round with a two or three inch tabling. Half the diameter of the masts is cut out in the middle at each end, and lacing-holes are made across the ends to connect one awning to another. On the upper part, along the middle and sides, is sewed a one-inch and half or two-inch rope, to which the trucks are sewed at about three-quarters of a yard asunder. A thimble is spliced in each end of the rope. Sometimes curtains are made to hang to the sides of the awnings, of the same length as the awnings. Their depth is taken from the sides of the awning to the gun-wale, supposing the awning to be in its place. The seams and tablings are the same as those of the awnings, and lacing-holes are made along the upper tabling of the curtain, and the side tabling of the awning. Clerke's Elem. and Practice of Rigging, vol. i. p. 140. 230. In the long-boat they make an awning, by bringing the sail over the yard and stay, and booming it out with the boat-hook.

AWOR'K, Awork'ing. } In work. See Work.

Long they thus trauail'd, yet neuer met
Adventure, which might them *aworking* set.
Spenser. Mother Hubberd's Tale

He first suborns a villain, that embrac'd
The nobler name of March-born Mortimer,
Which, in the title of the house of York,
Might set the monstrous multitude *awork.*
Drayton. Miseries of Queen Margaret.

Who shoulde bee the makers of anye maner cloth, if there lacked men of substaunce to set sūdry sortes *a woorke.* *Sir Thomas More's Workes.*

AWRE'KE. Ang.-Sax. awrecan, to wreak. See Wreak.

Than dame Prudence, whan that she saw how that hire husbande shope him for to *awreke* him on his foos, and to beginne werre, she in ful humble wise, whan she saw hire time, sayde him these wordes.
Chaucer. The Tale of Melibeus.

AWRISH, a river in the county of Durham, which runs into the Tees at Eggleton.

AWRY'. Past participle awrythed, of the verb wrythan, to writhe. Writhed, crooked, bended, distorted, askance.

When I look back, and in myself behold
The wand'ring ways, that youth could not descry:
And see the fearful course that youth did hold,
And mete in mind each step I strayed *awry.*
Paradise of Dainty Devices, 1600.

Preventing fate directs the lance *awry*,
Which glancing only mark'd Achates' thigh.
Dryden.

AX', } Ask. Asking. See ASK. These
AX'YNG. } words, which are now considered vulgarisms, are the original Saxon forms.

But Robin may not wete of this, thy knave,
Ne eke thy maiden Gille I may not save;
Axe not why; for though thou *axe* me,
I wol not tellen goddes privetee.
Chaucer. The Milleres Tale, v. i. p. 140.

AX, a town of France, the head of a canton, in the department of the Arriege, arrondissement of Foix. Here are warm baths which are much frequented. It lies on the river Arriege. Five leagues north-west of Tarascon. Population 1500.

AX, or AXE, a river of England, which rises in the county of Dorset, and entering Devonshire, passes by Axminster, and afterwards falls into the sea a little below Axmouth.

AX, a river of England, which rises in Wokey-Hole, near Wells, in the county of Somerset, and after passing Axbridge, falls into the Bristol channel, about eight miles lower down

AX, BATTLE. See AXE.

AXAM, a district and town of Tyrol, in the lower valley of the Inn, to the south-west of Inspruck. Here a great deal of flax is cultivated.

AXAMENTA, in antiquity, the verses or songs of the salii, which they sung in honor of all men. The word is formed, according to some, from axare, to nominate. Others will have the carmina saliaria to have been denominated axamenta, on account of their having been written in axibus, or on wooden tables. The axamenta were not composed by the salii. The author of them was Numa Pompilius; and, as the style might not be altered, they grew in time so obscure, that the salii themselves did not understand them. Varro says they were 700 years old.

AXAMENTA, or ASSAMENTA, in ancient music, hymns performed wholly with human voices.

AXARA, a town of Asiatic Turkey, in Natolia, situated in a fertile district of the same name, fifty or sixty miles from Guzel-Hissar.

AXATI, a town of ancient Bætica, in the Bœtis; now called Lora, a small city of Andalusia, in Spain, seated on the Guadalquiver.

AXAYACATL, a species of fly, common about the lakes of Mexico; the eggs of which, being deposited in immense quantities upon the rushes and corn-flags, form large masses, which are taken up by fishermen, and carried to market. This caviare, called ahuauhtli, which has much the same taste with the caviare of fish, used to be eaten by the Mexicans, and is now a common dish among the Spaniards. The Mexicans eat not only the eggs, but the flies themselves, made up together into a mass, and prepared with saltpetre.

AXBRIDGE, a market town of Somersetshire, anciently a borough, by prescription, sending members to parliament during the reigns of the first three Edwards, after which it was, at its own desire, excused. The corporation consists of a mayor, recorder, town-clerk, ten aldermen, and twenty-two burgesses, out of whom a sheriff, serjeant-at-mace, and constables are chosen. Knit hose is the only manufactory. Th
of England formerly had a hunting cha
Market on Saturday. It is twenty-thre
north-west of Somerton, and 131 west of

AXE'. Gr. Αγω, αξω. An adze or
See ADDICE.

My mangled body shows,
My blood, my want of strength, my sick hea
That I must yield my body to the earth,
And by my fall the conquest to my foe;
Thus yields the cedar to the *axe's* edge,
Whose arms give shelter to the princely eagl
Shakspeare. Third Part of Henry VI. act

Loud sounds the *axe*, redoubling strokes o
On all sides round the forest hurls her oaks
Headlong. Deep echoing groan the thicket
Then rustling, crackling, crashing, thunder
Pope's Homer's Iliad, x

Like crowded forest trees we stand,
And some are mark'd to fall;
The *axe* will smite at God's comman
And soon will level all.

AXE, a river in Somersetshire, wh
into the Severn below Uphill.

AXE, or AX, differs from the hatchet,
is made larger and heavier, to hew lar
and its edge tapering into the middl
blade. It is furnished with a long hand
to be used with both hands.

AXEL, or AXIL, a small fortified
Dutch Flanders, in the kingdom of the
lands. It is seated among marshes,
miles north of Ghent.

AXELODUNUM, the ancient name
ham, in Northumberland.

AXENUS, the ancient name of the
Sea, the signification of which is, inho
and is perfectly answerable to the di
and manners of the ancient inhabitan
east.

AXE-STONE, in mineralogy, a sub-
jade, but not of so light a green, and
of a slaty texture. The natives of New
work it into hatchets. It is found in
Switzerland, Saxony, and on the bank
river Amazons, whence it has been cal
zonian stone. Its constituents are sil
magnesia 31, alumina 10, oxide of
water 2·75, oxide of chromium 0·05.

AXEY, the principal town in the
Axholm. It is thinly inhabited.

AXHOLM, a river island in the
part of Lincolnshire. It is formed by
Trent, Idel, and Dun; and is about
long, five broad, and twenty in compas
three villages, Crowle, Epworth, an
besides Axey, the chief town. The l
is marshy, but produces an odorifer
called gall; the middle is rich an
yielding flax in great abundance. It
duces an alabaster, which is used fo
lime. In the eighteenth century the
woman, quite entire, and in a bent po
head and feet almost in contact, was
morass, which, from the fashion of he
was conjectured to have lain there fro
of Edward I. when there were two
here.

AXIACE, an ancient town of Sar
ropea; now Oczacow.

AXIL. See AXEL.

AXILLA, in anatomy, or ALA, the cavity under the upper-part of the arm; commonly called the arm-pit. It is a diminutive of axis, q. d. little axis. Abscesses in the axillæ are usually dangerous on account of the many blood-vessels, lymphatics, nerves, &c. thereabout, which form several large plexuses. By the ancient laws, criminals were to be hanged by the axillæ if they were under the age of puberty.

AXILLA, in botany, is the space comprehended between the stems of plants and their leaves. Hence we say, those flowers grow in the axillæ of the leaves; i. e. at the base of the leaves, or just within the angles of their pedicles.

AXILLARY ARTERY is that part of the subclavian branch of the ascending trunk of the aorta, which passes under the arm-pits.

AXILLARY GLANDS are situated under the arm-pits, enveloped in fat, and lie close by the axillary vessels.

AXILLARY NERVE, called also the auricular nerve, arises from the last two cervical pairs; runs into the hollow of the axilla, behind the head of the os humeri, between the musculus teres major and minor, &c.

AXILLARY VEIN, is one of the subclavian veins; which, passing under the arm-pits, divides itself into several branches; superior, inferior, external, internal, &c. which are spread over the arm.

AXILLARY VERTEBRA, the second vertebra of the back, so called because it is nearest to the arm-pits.

AXIM, a district of Africa, part of the fertile territory of Ahanta, on the Gold Coast. It is directly east of Apollonia, from which it is separated by the river Ancobra. The Dutch have a fort at Axim called Fort Anthony, situated on the most western promontory of Cape Three Points. It is compact, well situated for landing, and in a commanding position. Ten leagues east of Apollonia.

The climate is so excessively moist, that it is proverbially said to rain eleven months and twenty-nine days of the year. This excessive moisture renders it very unhealthy; but it produces great quantities of rice, water-melons, lemons, oranges, &c. Here are also produced vast numbers of black cattle, goats, sheep, pigeons, &c. The whole country is filled with beautiful and populous villages, and the intermediate lands are well cultivated. The natives all go naked, but are very healthy; and there is a constant traffic carried on with them by the Europeans for their gold. This canton is a kind of republic, the government being divided between the Caboceroes or chief men, and Manateroes or young men. But in their courts, whoever makes the most valuable present to the judges is sure to gain his cause. The Portuguese founded the first settlement here, but were driven from it by the Dutch in 1642.

AXIM, a river in the above canton, which runs through the town of Axim.

AXIM, or Auchombone, the capital of Axim, stands under the cannon of the Dutch fort St. Antonio. It is secured behind by a thick wood that covers the whole declivity of a neighbouring hill. Between the town and the sea runs an even and spacious shore of beautiful white sand. All the houses are separated by groves of cocoa, and other fruit-trees, planted in parallel lines, each of an equal width, and forming an elegant vista. The coast is defended by a number of small pointed rocks, which project from the shore, and render all access to it dangerous.

AXINAE'E, AXINÆÆ, in natural history, a genus of the Mollusca tribe (Testacea,) established by Poli, in his history of the shells of the two Sicilies. The character is taken from the form of the animal; the shell belongs tó the Arca genus of the Linnæan arrangement.

AXINITE, in mineralogy, a crystallised substance, found principally in Dauphiny, in France, and latterly in the neighbourhood of St. Just, Cornwall. The colors are a light violet brown. The crystals resemble an axe in the form and sharpness of their edges; being flat rhomboidal parallelopipeds, with two of the opposite edges wanting, and a small face instead of each. They become electric by heat. Lustre splendent. Hard, but yields to the file, and easily broken. Specific gravity 3·25. It froths like zeolite before the blow-pipe, melting into a black enamel, or a dark green glass. According to Vauquelin's analysis, it contains forty-four silica, eighteen alumina, nineteen lime, fourteen oxide of iron, and four oxide of manganese.

AXINOMANCY, AXINOMANTIA; from αξινη, an axe, and μαντεια, divination; an ancient species of divination, or a method of foretelling future events by means of an axe or hatchet. This art was in considerable repute among the ancients; and was performed, according to some, by laying an agate stone on a red hot hatchet, and also by fixing a hatchet on a round stake so as to be exactly poised; then the names of those that were suspected were repeated, and he at whose name the natchet moved was pronounced guilty.

AX'IOM, } Gr. Αξιωμα, from αξιοω,
AXIOMAT'ICAL. } to think worthy. A self-evident proposition.

> The universal *axiom* in which all complaisance is included, is, that no man should give any preference to himself. *Johnson.*

> That a conjectural critick should often be mistaken, cannot be wonderful, either to others or himself, if it be considered that in his art there is no system, no principal and *axiomatical* truth that regulates subordinate positions.
>
> *Johnson's Preface to Shakspeare.*

AXIOM, in rhetoric, is used by Hermogenes to denote grandeur, dignity, and sublimity of style.

AXIOMS, in logic. That the whole is greater than a part; that a thing cannot be, and not be at the same time; and that from nothing, nothing can arise; are axioms indisputable. Established principles in arts and sciences are also stileu axioms. Thus it is an axiom in physics, that nature does nothing in vain; that effects are proportional to their causes, &c. It is an axiom in geometry, that things equal to the same thing, are also equal to one another; that if to equal things you add equals, the sums will be equal, &c. It is an axiom in optics, that the angle of incidence is equal to the angle of reflection, &c.

AXION, the brother of Alphesibœa, who murdered Alcmæon, his sister's husband, because he wished to take back a golden necklace he had given her.

AXIOPOLI, a town in Bulgaria. Long. 34° 0′ E., lat. 45° 40′ N. It was formerly called

AXIOPOLIS; a town of the Triballi, in Mæsia Interior.

AXIOS, a form of acclamation, anciently used by the people in the election of bishops. When they were all unanimous, they cried out *αξιοσ!* he is worthy! or *αναξιοσ!* unworthy!

AXIOSIS, *αξιοσις*, in rhetoric, denotes the third part of an exordium; sometimes called *αποδοσις*, and containing some new proposition more nearly relating to the subject, than the *προτασις*. Thus in Cicero's oration, pro Milone, the protasis is, Non possim non timere, judices, visa hâc nova judicii forma: the katascue, Nec enim ea corona confessus vester cinctus est qua solebat: the axiosis, Sed me recreat Pompei consilium, cujus sapientiæ non fuerit, quem sententiis judicium tradidit, telis militum dedere: the basis, Quamobrem adeste animis judices, et timorem, si quam habetis, deponite.

AXIOTEA, or AXIOTHEA, a female philosopher of Greece, who lived in the time of Plato, and attended his lectures, dressed in the habit of a man.

AX'IS,
AXLE,
AXLED,
AXLE-TREE. } Lat. *axis*, Gr. *αξων*, from *αγειν*, to go round. Axis is a line drawn through the centre of any body round which it revolves.

> The line, that we deuise from thone to thother so,
> As *axell* is; upon which the heaven's about do go.
> *Wyatt.*
>
> But mark me also, these mouinges of these seuen,
> Be not aboue the *axeltree* of the first mouing heauen.
> *Id.*
>
> Inferior ministers, for Mars repair
> His broken *axle-trees*, and blunted war.
> *Dryden. Virgil's Æneid.* viii.
>
> And bade her spirits bear him far,
> In Merlin's agate-*axled* car,
> To her green isle's enamelled steep,
> Far in the navel of the deep.
> *T. Warton. The Grave of King Arthur.*

AXIS, in anatomy, the second vertebra of the neck, thus called because the first vertebra with the head, moves thereon, as on an axis.

AXIS, in astronomy, is an imaginary right line supposed to pass through the centre of the heavenly bodies, about which they perform their diurnal revolutions.

AXIS, in botany, a taper column placed in the centre of some flowers or catkins, about which the other parts are disposed.

AXIS, in conic sections, a right line dividing the section into two equal parts, and cutting all its ordinates at right angles.

AXIS, in geometry, the straight line in a plain figure, about which it revolves, to produce or generate a solid. Thus if a semicircle be moved round its diameter at rest, it will generate a sphere, the axis of which is that diameter.

AXIS, in mechanics. The axis of a balance is that line which it moves, or rather turns about.

AXIS, in optics, is that particular r
coming from any object which falls p
larly on the eye.

AXIS, common or mean, in optics,
drawn from the point of concourse fr
optic nerves, through the middle of th
which joins their extremity.

AXIS, in peritrochio, one of the six
powers, consisting of a peritrochium
concentric with the base of a cylinder,
able together with it about its axis.

AXIS, in zoology, a very remarkal
of the deer kind in all respects, e
neither the male nor female have hor
is considerably long, and the whole
make are extremely like those of the
The female is smaller than the male
are of a reddish tawny color, varie
spots of white; the belly is white. T
much more loud and shrill than that
It is plain that this creature is neither
nor fallow deer kind, whence Belloniu
it at Cairo in Egypt, was induced to
Axis.

AXIS, determinate, in a hyperbol
line which divides it into two equal p
right angles, an infinite number of li
parallel to each other within the hype

AXIS, MAGNETICAL, or AXIS OF
a line passing through the middle of
lengthways, in such manner, as that h
magnet be divided, provided the
made according to a plane wherein
found, the load-stone will be mad
load-stones. The extremities of suc
called the poles of the stone.

AXIS OF A PLANET, is a line dra
the centre, about which the planet rev
sun, moon, and all the planets, exce
and Saturn, are known, by observatio
about their several axes; and the lik
easily inferred from those two.

AXIS OF A SPHERE, or CIRCLE, i
as diameter.

AXIS OF A VESSEL, is an imaginar
passing through the middle of it perp
to its base, and equally distant from i

AXIS OF INCIDENCE in dioptrics,
drawn through the point of incidence
cular to the refracting surface.

AXIS OF OSCILLATION, is a right l
to the horizon, passing through the c
which a pendulum vibrates.

AXIS OF REFRACTION, is that whi
by the ray of incidence directly pr
the inside of the second medium b
refraction.

AXIS OF THE CYLINDER, is proper
escent right line, about which the pa
turns, by whose revolution the cylinde
Though, both in right and oblique cy
right line joining the centres of th
bases, is also called the axis of the cy

AXIS OF THE EARTH, is a right
which the earth performs its diurnal r
west to east.

AXIS OF THE IONIC CAPITAL, is a
perpendicularly through the middle o
the volute.

AXIS OF THE ZODIAC, a line supposed to pass through the earth and terminate in the poles.

AXIS, SPIRAL, is the axis of a twisted column drawn spirally, in order to trace the circumvolutions without.

AXMINSTER, a town of Devonshire, situated on the river Ax, in the great road between London and Exeter, being twenty-five miles east of the latter place. It was a place of some note in the time of the Saxons, and now contains about 2500 inhabitants. It has a manufactory of broad and narrow cloths, and an extensive one of carpets, manufactured after the Turkish manner: its carpets are often preferred to those from Turkey. The petty sessions are holden here. King Æthelstan founded a minster here, for seven priests, to pray for the souls of those who were slain in a battle which he fought with the Danes at Bremaldown. It has four fairs: on the 24th of February, 25th of April, 24th of June, and Wednesday after Michaelmas, with a market on Saturday. It is 147 miles west of London. Long. 3° 8′ W., lat. 50° 45′ N.

AXOLOTI, in icthyology, a singular fish found in the lakes of Mexico. It has four feet like the lizard, no scales, a matrix like a woman, and the menstrual flux. It has the taste of an eel.

AXONES; αξωνες; public laws of the ancient Greeks, particularly of the Athenians, so named from their mode of publication.

AXTEL (Daniel), a regicide, and colonel in the service of the long parliament, was of a good family, and had a tolerable education. As he was of a serious disposition, and had been very early tinctured with puritanical principles, he became a fervent follower of such ministers as distinguished themselves by their zealous preaching. His great attachment to these people, and the natural warmth of his temper, were the cause of his going into the army, in which he behaved with so much zeal, courage, and conduct, that he rose by degrees to the several commands of captain, major, and lieutenant-colonel, in a regiment of foot. It was in this last capacity that he acted with great vehemence against all endeavours for a reconciliation with the king. When the king was brought before the high court of justice, colonel Stubberd and Axtel had the command of the soldiers below stairs. The king demanded of sergeant Bradshaw, the president, by what authority they brought him there? and the president appealing to the charge, which was in the name of the Commons of England, lady Fairfax and Mrs. Nelson are said to have cried out, 'It is false; not a half, not a quarter of the people.' Upon this colonel Axtel cried out, 'Down with the w——; snoot them!' After the sentence, the king was carried through King-street, in a sedan, by two porters, who, out of reverence, went bare-headed, till the soldiers under Axtel's command beat them, and forced them to put on their hats. After the king's death, when Cromwell was sent into Ireland, the regiment in which Axtel served was drawn out by lot for that expedition, which occasioned his going over into that kingdom, where he made a considerable figure, was much esteemed, and raised by Cromwell to the command of a regiment, and the government of Kilkenny After the Protector's death Axtel endeavoured to conceal himself, suspecting that he might be called to an account for the share he had taken in the trial of the king; but before the close of the month he was discovered and committed to prison. On the 10th of October the grand jury for Middlesex found bills against twenty-eight persons, for their concern in the king's death, of whom Axtel was the last. His trial, by the elaborate defence he made, lasted upwards of three hours: but the jury, without going from the bar, found him guilty; and he was executed, on the 19th, at Tyburn.

AXUM, AXOMA, AXOMIS, or AKSUM, in Abyssinia, the capital of a powerful state in the time of the Ptolemies, and perhaps of all Abyssinia; still retaining monuments of its former splendor. An ancient throne of granite, and two rows of obelisks, struck Mr. Salt as amongst the most beautiful ancient relics he had ever seen. But perhaps the most curious of all is a long Greek inscription, which records the victories of one of the Ptolemies and the extent of their empire. Frumentius, the apostle of Ethiopia, was the first bishop of Axum, and many churches had been excavated from the surrounding mountains before the close of the fifth century. It carried on a considerable trade with India and Arabia, through the port of Adulis. It is the place where the kings of Abyssinia are crowned. Mr. Salt found it to be in lat. 14° 6′ 36″ N. Its present population is about 3000. The inhabitants are rude and inhospitable. They wear coarse woollen clothes. The monks prepare the best parchment in all Abyssinia. The church of Axum appears to have been built in 1657, and is considered by Mr. Salt, excepting that of Chelicut, as the finest in the province of Tigré. The town stands agreeably sheltered by hills, at the corner of an extensive valley. It is described by Bruce as containing 600 houses.

AXUNGIA, in a general sense, denotes old lard, or the driest and hardest of any fat in the bodies of animals; but more properly it signifies only hog's lard.

AXUNNYIA LUNÆ, an affected name given by the German chemists to the terra goltbergensis, from their imagining that it contains some particles of silver, and owes to them its virtues in medicine.

AXUNGIA SOLIS is used for the terra silesiaca, and said to be good against the plague, pestilential fevers, &c.

AXUNGIA VITRI, SANDIVER, or salt of glass, a kind of salt which separates from the glass while it is in fusion. It is of an acrimonious and biting taste. The farriers use it for cleansing the eyes of horses. It is also made use of for cleansing the teeth; and it is sometimes applied to running ulcers, the herpes, or the itch, by way of desiccative.

AXYLUS, an ancient hero of Arisba, celebrated by Homer for his hospitality, which gained him the appellation of the Friend of Mankind.

AXYRIS, a genus of the triandria order, and monœcia class of plants, ranking in the natural method under the twelfth order holoraceæ. The calyx of the male is tripartite; it has no corolla The calyx of the female consists of two leaves; it has two styli and one seed.

AY. Sax. Ever. For ever.

AY, a town of France, in the department of Marne, near the river Marne, remarkable for its excellent wines. It lies twelve miles south of Rheims, and one mile and a half north-east of Epernay. Inhabitants 2600.

AYACUCHO, BATTLE OF. This engagement is one of the most celebrated in the history of South America, having been decisive of the independence of Upper and Lower Peru. For several months before this event, the Colombian auxiliary army, under general Sucre, and the royalist army, under the viceroy La Serna, had been moving in face of each other with various success, but, on the whole, to the disadvantage of the Colombians. Sucre and his men were anxious for battle; and at length La Serna determined to engage them on the plain of Ayacucho, Dec. 9, 1825. The royalist force consisted of 9,310 men, that of the patriots of 5,780 men. Generals Sucre (the commander in chief), La Mar, Cordova, and Miller distinguished themselves on this occasion, and the battle terminated in the total defeat of La Serna, who was taken prisoner, with the loss of 1800 men in killed and wounded, and in the capitulation of Canterac, the second in command. Of the patriots, only 370 were killed. This splendid victory effectually accomplished the delivery of Peru from the Spaniards.

AYAG, or KAYACHU, one of the Andreanofskie islands, in the eastern or Pacific Ocean, about 150 versts in circumference, and consisting of several high and rocky mountains, the intervals of which are bare heath and moor ground; but in the whole island there is not one forest-tree.

AYAMONTE, a sea-port town of Andalusia in Spain, with a strong castle built on a rock; seated on the mouth of the Guadiana, eighty-five miles north-west of Cadiz. It has a commodious harbour, a productive sardel fishery, fruitful vineyards, and excellent wine. Population about 5000.

AYAS, a town and castle of Caramania, in the government of Adana, on the bay of Ayas, near the Jypoo, and on the west side of the Gulf of Scanderoon, or Iskenderoon, the ancient Sinus Issicus. It is fortified all round; and here are the remains of a fort and artificial pier. A little to the westward is a round tower with an Arabic inscription. Myriads of fish, numerous fine turtle, and aquatic birds, abound on the shore. This place is supposed to be the ancient Ægæ. Long. 35° 48′. E., lat. 36° 46′ N.

AYASH, a village on the same coast, surrounded by the ruins of a town that has occupied a considerable space of ground, and containing the remains of a theâtre and many other edifices. The most conspicuous of the whole is a temple, situated on a projecting eminence. Its columns are of the composite order, fluted, and about four feet in diameter. This is conjectured to have been the ancient Sebasta.

AYAVIRI, a town of Lima, in Peru, remarkable for many stately tombs of the Peruvian nobility.

AYBAR, a town of Spain, in Navarr
Arragon, famous for a battle fought he
year 1451, betwen John king of Castile,
son Don Carlos, in which the latter was
and taken prisoner. Three miles south
guesa.

AYDON BRIDGE, or HEYDON B
town in Northumberland, five miles wes
ham, so named from its bridge over t
It has a market on Tuesday, and a fair
21st, 22d, 23d, and 24th.

AYE. *Ayez.* The imperative of th
verb *avoir*, to have; signifying have it,
it, enjoy it. The expression is si
Swedish, German, and Dutch.

> Return you thither?
> *Ay*, madam, with the swiftest wing of spe
> S
>
> What say'st thou? wilt thou be of our co
> Say *ay*, and be the captain of us all.
>
> Sometimes in mutual sly disguise,
> Let *ayes* seem *nos*, and *nos* seem *aye*
> *Ayes* be in courts denials meant,
> And *nos* in bishops give consent.
> Thus *aye* proposed, and, for reply,
> *No* for the first time answer'd *aye*.
> They parted with a thousand kisses,
> And fight e'er since for pay like Swi
> *Gay's Fables. Ay*

AYEK JEMANI, a species of corneli
valued by the Arabians.

AYEL, Fr. in law, a writ which lies
grandfather was seized in his demesn
day he died, a stranger enters the same
dispossesses the heir.

AY'EN, } See AGAIN.
AY'ENST. }

AYENIA, in botany, a genus of th
dria order and gynandria class of plants
in the natural method under the thirt
order, columniferæ. The calyx has tw
the petals are in the form of a star,
ungues; and the capsule has five cell
are three species all natives of the Wes

AYERBE, or AYERVE, the capital
rony, in the district of Huesca, Arra
ated at the foot of the Pyrenees, thirty-
north of Saragossa.

AYERSTOWN, a town of the Unit
in New Jersey, thirteen miles south-
Burlington.

AYESHA, the wife of Mahomet, an
ter of Abubeker. The impostor had
regard for her than for any of hi
though she had no children; and his
highly respected her. She opposed
cession and raised an army against
after a severe contest was made priso
conqueror, however, dismissed her wit
This turbulent woman died in 677, a
seven.

AYGULA, in zoology, a species o
ape.

AYGULUS, in entomology, a speci
rabæus that inhabits India.

AYLESBURY (Sir Thomas), merit
in a work of this kind, not only as
man himself, but as the patron of men
He was born in London in 1576, was

at Westminster, and studied at Oxford, where he took his degree of A.M. in 1605. He became secretary to Charles earl of Nottingham, lord high admiral, and gave so many proofs of his skill in mathematics, that he retained his secretaryship under the duke of Buckingham upon his succeeding the earl. By the duke's influence he was appointed master of requests, and master of the mint, and created a baronet. The profits of these lucrative offices he applied to the most benevolent purposes. He not only made all men of science welcome to his table and afforded them his best countenance, but also gave regular pensions to such of them as were in narrow circumstances. It is to be regretted that a man of so benevolent a character should himself have afterwards experienced adversity. In consequence of his steady adherence to the king, he was, in 1642, stripped of his places and estate, but he bore up cheerfully under his misfortunes, and in 1649 retired with his family to Brussels. He died at Breda in 1657, aged eighty-one.

AYLESBURY (William), the son of the baronet, took his degree of A.M. at Christ Church, in the sixteenth year of his age, and like his father, was a sufferer by his adherence to the cause of royalty. King Charles I. early appointed him travelling preceptor to George Villiers duke of Buckingham, and his brother, Lord Francis. During their travels in Italy he was nearly killed by an assassin. He returned to England during the civil war, but after the king's death retired to Antwerp. In 1650 he again returned to England, where he experienced great difficulties, being often in want of daily necessaries. At last, in 1657, the protector having fitted out a fleet for the West Indies, he was engaged as secretary to the governor of Jamaica, the climate of which soon cut him off.

AYLESBURY. See AILESBURY.

AYLESFORD. See AILESFORD.

AYLETS, or SEA SWALLOWS. In heraldry, they are often called Cornish choughs, and are painted sable, beaked, and legged gules.

AYLETT (Robert), an English author of the seventeenth century. He was educated at Trinity Hall, Cambridge, where he took the degree of LL.D. in 1614, and afterwards became master in Chancery. He wrote Susanna, or the Arraignment of the Two Elders, a poem, 1622, 8vo. besides several other poetical pieces. He is thought by some to have been the author of the Britannica Antiqua Illustrata, which is generally attributed to his nephew, Aylett Sammes.

AYLIN (John), an Italian writer of the fourteenth century. His chief work is a History of Friuli, printed in Muratori's Antiquitates Italicæ medii Ævi, Milan, 1740.

AYLMER (John), bishop of London in the reign of Elizabeth, was born in 1521, at Aylmer-hall, in Tilney, Norfolk. While a boy he was distinguished for his quick parts, by the marquis of Dorset, afterwards duke of Suffolk; who sent him to Cambridge, made him his chaplain, and tutor to his children. One of these was the unfortunate Lady Jane Gray, who soon became perfectly acquainted with the Latin and Greek. His first preferment was to the archdeaconry of Stow, which gave him a seat in the convocation held in the first year of queen Mary, where he resolutely opposed the return to popery, to which the generality of the clergy were inclined. He was soon after obliged to take shelter among the Protestants in Switzerland. On the accession of Elizabeth he returned to England. In 1562 he obtained the archdeaconry of Lincoln; and was a member of the famous synod of that year, which reformed and settled the doctrine and discipline of the church of England. In 1576 he was consecrated bishop of London. He died in 1594, aged seventy-three; and was buried in St. Paul's. He published An Harbrowe for faithful and trewe Subjects against the late blowne Blaste concerning the Government of Women, &c. In answer to Knox, who published a book at Geneva under this title, The first Blast against the monstrous Regimen and Empire of Women. Strype gives the following instance of his courtly courage:—Queen Elizabeth being once tormented with the tooth-ache, and yet afraid of having the tooth drawn, bishop Aylmer being by, to encourage her majesty, sat down in a chair, and calling to the operator, 'Come,' said he, 'though I am an old man, and have but few teeth to spare, draw me this;' which was done; and the queen seeing him make so slight a matter of it, sat down and had hers drawn also.

AYLOFFE (Sir Joseph), of Framfield in Sussex, was descended from a Saxon family anciently seated at Bocton Aylof, in Kent, in the reign of Henry the Third. He was born about 1708; received the early part of his education at Westminster school; admitted of Lincoln's Inn 1724; and in the same year was entered a gentleman commoner at Oxford, which he quitted about 1728; was elected F.A.S. Feb. 10, 1731; one of the first council, under their charter, in 1751; vice-president and F.R.S. June 3, 1731. He prevailed on Mr. Kirby, painter of Ipswich, to make drawings of a great number of monuments and buildings in Suffolk, of which twelve were engraved, with a description, 1748; and others remain unpublished. On the building of Westminster-bridge he was appointed secretary to the commissioners, 1736-7; and on the establishment of the Paper-Office on the respectable footing it is at present, by the removal of the State Papers from the old gate at Whitehall to new apartments at the treasury, he was nominated the first in the commission for the care and preservation of them. In 1757 he circulated proposals for printing by subscription, Encyclopædia; or, a rational Dictionary of Arts, Sciences, and Trade. In 1772 he published in 4to. Calendars of the Ancient Charters, &c. and of the Welsh and Scottish Rolls now remaining in the Tower of London, &c. and in the introduction gives a judicious and exact account of our Public Records. He drew up the account of the chapel of London-bridge, of which an engraving was published by Vertue in 1748, and again by the Society of Antiquaries, 1777. His historical description of the interview between Henry VIII. and Francis I. on the Champ de Drap d'Or from an original painting at Windsor, and his account of the paintings of the same age at Cowdray, were inserted in the third volume of the Archæologia, and printed separately to accompany engravings of two of these pictures by the Society of Antiquaries, 1775. His account of the body of Edward I. as it appeared on opening his tomb, 1774, was printed in the same volume p. 376. His intimate acquaintance with every part of Westminster Abbey displayed itself in his accurate description of five monuments in the choir, engraved in 1779 by the same society. He superintended the new edition of Leland's Collectanea, in nine vols. 8vo.; and also of the Liber Niger Scaccarii, in two vols. 8vo.; to each of which he added a valuable appendix. He also revised an edition of Hearne's Curious Discourses, 1771, two vols. 8vo.; and the Registrum Roffense, published by Mr. Thorpe, in 1769, folio. At the beginning of the seventh volume of Somers's Tracts is advertised A Collection of Debates in Parliament before the Restoration, from MSS. by Sir Joseph Ayloffe, bart. which is supposed never to have appeared. Sir Joseph died at his house at Kennington-lane, Lambeth, April 19, 1781, aged seventy-two.

AYMAR (James), a celebrated impostor, born at Veran, in Dauphine. He became famous, and acquired considerable wealth about the end of the seventeenth century, by giving out that he was in possession of a divining rod for bringing to light hidden treasure. The cheat was detected, and he was suffered to fall back into his former obscurity; but the noise he had raised gave occasion to De Vallemont's learned book on the powers of the *divining rod*, which see.

AYMARES, a district of Peru, forty leagues south-west of that city, abounding in sugar, cattle, corn, and mines of gold and silver.

AYMON (John), a Roman Catholic priest of Piedmont, who took part with the Protestant cause, and afterwards returned to the Catholic faith. Cardinal de Naoilles gave him a pension, and he wrote several books in opposition to the Reformers. He likewise published the letters of Cyril Lucar, Les Synodes nationaux des Eglises reformées de France, 1710, 2 vols. 4to.; and Tableau de la Cour de Rome, 1710, 12mo.

AYOQUANTOTOTL, or Avis Ayoquantototl, in ornithology, the name under which the oriolus xanthornus of Gmelin is described by some old writers.

AYORA, a town of Spain, in Valencia. Long. 16° 40′ E., lat. 39° 5′ N.

AYR, or Air, in Scotland. See Air.

Ayr, or Air, a river of France, in the duchy of Bar, which abounds in fish, and falls into the Aisne, near Grandpré, in the department of the Ardennes.

AYRES, an English penman of the seventeenth century. He was employed in the service of Sir William Ashhurst, in 1694, to whom he dedicated a treatise, entitled Arithmetic made Easy. In 1695 he published his Tutor to Penmanship, engraved by John Strut. He lodged at the Hand-and-Pen, St. Paul's Church-yard, where he probably kept a school.

AYRMIN, or Ayermin (William), a bishop of Norwich in the reigns of Edward II. and III. was descended of an ancient family at Osgodby in Lincolnshire. He was a canon in the cathedral of York, and afterwards in that of Wells; and was for some time keeper of the seal, and vice-chancellor to king Edward II. unde
bishop of Norwich. About A. D. 1319,
having broke out between England and S
Ayrmin was taken prisoner in a battle b
the Scotch and Yorkists. Recovering his
he was made chancellor under Edward I
afterwards treasurer. Being sent amb
to the court of Rome, he neglected the b
of his embassy, and employed his time
terest in obtaining the bishopric of N
which was then vacant; in which appl
meeting with success, he returned to tak
session of that see: which the king heari
being disgusted at his proceedings, sent
to Norwich to apprehend him; but Ayr
hid in the cathedral church, till by the i
sition of friends the king was reconciled
and consented to his consecration. He
1337.

AYR-MOSS, a place in the parish of A
leck in Ayrshire, memorable for a defe
party of those friends of religion and
called Covenanters, during the turbulent a
pressive reign of Charles II.

AYRON, a river of Wales, in Cardiga

AYR-SHIRE. See Air.

AYRTON (Edmund), was born at
Yorkshire, in the year 1734, and di
1808. At the age of thirty he becam
of the gentlemen of the Chapel Roy
James's, and subsequently a vicar choral
Paul's and Westminster Abbey. In 17
took his degree of doctor of music in the
sity of Cambridge, on which occasion he
posed a grand anthem for a full orchestra,
wards performed at St. Paul's Cathedral,
day appointed for the general thanksgivi
peace in 1784. Dr. Ayrton took a leadin
in the commemoration of Handel in Westm
Abbey.

AYRY, or Eyery. Ey, Teutonic, an
eyr, eggs; the eyery, or eggery, where th
are deposited. Used of hawks, or other bi

> Yon sun-bred *ayry*, whose immortal birth
> Bears you aloft beyond the sight of earth.
> The heaven-touch'd feathers of whose sprightl
> Skirts (from above) the palaces of kings.
>
> *Drayton.* Th

> The eagle and the sto
> On cliffs and cedar tops their *eyries* build.
>
> *Milton. Paradise Lost*, bo

> I should discourse on the brancher, the ha
> and then treat of their several *ayries*.
>
> *Walton's*

AYSCOUGH (George Edward), only
Dr. Ayscough, dean of Bristol, was a lieu
in the guards. He wrote Semiramis, a tra
and Letters from an officer in the guards
friend in England; containing some accou
France and Italy, 8vo. 1778. He died Oc
1779.

AYSCUE (Sir George), a gallant Engli
miral, descended from a good family in Li
shire. He was knighted by Charles I.,
however did not withhold him from adher
the parliament in the civil war: he was by
constituted admiral of the Irish seas, wh
did great service to the protestant interes
contributed much to the reduction of the

In 1651 he reduced Barbadoes and Virginia, then held for the king, to the obedience of the parliament; and soon after the Restoration behaved with great honor in the war with the Dutch. In the famous engagement in the beginning of June 1666, when Sir George was admiral of the white squadron, his ship, the Royal Prince, ran upon Galloper sand; where, being surrounded with enemies, his men obliged him to strike. He went no more to sea after this, but spent the rest of his days in retirement.

AYSEAUX, a castle and marquisate of the Netherlands, in Hainault, on the Dender.

AYSERIUS, or ASSERIUS. See ASSER.

AYTONIA, in botany, a genus of the monadelphia order, and the pentandria class of plants; the characters of which are: the calyx is quinquepartite; the corolla consists of four petals; the berry is dry, quadrangular, unilocular, and many seeded. There is but one species, viz. A. Capensis, a native of the Cape.

AYUTLA, a river of South America, in the province of Guatimala, which flows into the Pacific Ocean. Lat. 14° 55′ N.

AZAB, a place on the coast of Abyssinia, in lat. 13° N., where Bruce says 'he found the remains of a very ancient aqueduct.' He supposes it to be the Sabæ of Strabo; and the country of the Sabæi so famous for their myrrh and frankincense. 'Those gums,' he adds, 'are still produced in the neighbourhood.' Behind are pits of rock salt, whence the pieces used as coin by the Abyssinians are extracted. See *Bruce*, vol. i. Strabo. xvi. *Diod.* iii.

AZAB, in the Turkish armies, a distinct body of soldiery who are great rivals of the Janissaries. In the oriental languages the word signifies an unmarried person; the original rule being—that this corps should be composed of single men.

AZABE KABERI, from kaber, sepulchre, and azab, torment, denotes a temporary punishment, which, as the Mahommedans say, the wicked must suffer after death. Their crimes are hereby expiated, and Mahomet opens the gate of Paradise to all who believe in him.

AZALDUS, in old law Latin, a sorry horse.

AZALEA, AMERICAN UPRIGHT HONEYSUCKLE, a genus of the monogynia order, and pentandria class of plants; ranking, in the natural method, under the eighteenth order, bicornes. The corolla is bell-shaped; the stamina are inserted into the receptacle; and the capsule has five cells. There are six species, of which the most remarkable are the following: 1. A. nudiflora, or red American upright honeysuckle, grows taller than the viscosa, and in its native country will sometimes arrive at the height of twelve feet, but in Britain never rises to above half that height. It has several stems with oblong smooth leaves. 2. A. rubriflora, a species with bright red flowers, was found by Mr. Lightfoot upon the tops of many mountains in the Highlands of Scotland. 3. A. viscosa, with a white flower, is a low shrub, arising with several stems to the height of two or three feet. The leaves come out in clusters without any order at the end of the shoots, and their edges are set with very short teeth which are rough. The flowers come out in clusters between the leaves, have much the appearance of honeysuckle, and are as well scented.

AZAMOR, a small sea-port town of the kingdom of Morocco in Africa. It is situated on the river Morbeya, in the province of Duquella, at some considerable distance from its mouth. This town, though formerly very considerable, is obstructed in its maritime commerce by the dangerous entrance of the river. It was unsuccessfully besieged by the Portuguese in 1508; it was taken however, in 1513, by the duke of Braganza, but abandoned about the end of the sixteenth century. Mr. Jackson calculates its population at 1000. It is eighty miles north of Morocco.

AZARADEO, a sea-port town of Brasil, in the bay of Spiritu Santo. Long. 60° 10′ W. lat. 20° 18′ S.

AZARAKITES, a sect of Mahommedan Arabs.

AZARECAH, a sect of heretical Mussulmans who acknowledge no punishment, temporal or spiritual.

AZARIAH; from עיר, and ית, i. e. the help of the Lord; king of Judah. See UZZIAH. Also the name of various high priests and princes ot the Jews.

AZARIAS, a Jewish rabbi and historian of the sixteenth century. In 1574 he published at Mantua, in Hebrew, a book entitled The Light of the Eyes. Many historical and miscellaneous subjects are treated of in this work; and it contains a Hebrew version of the letter of Aristeas on the Septuagint.

AZARIST, a city of Khieva, on the river Amo which was visited by the English factors in 1741

AZAROLA, the service tree.

AZARUM, a small, dry, blackish, stringy, medicinal root, much used in France as a specific for the farcy in horses. The azarum, called also nardus sylvestris, grows in the Levant, Canada, and about Lyons in France. The first is reputed the best. It is given in powder, from the quantity of one ounce to two.

AZAY, or ASSAIE-LE-RIDEAU, a town of France, in the department of the Indre and Loire, situated on the Indre, the head of a canton, with a castle, and 1700 inhabitants. It was in former times a place of strength, and the seat of a royal governor. Five leagues south-west of Tours.

AZAY-SUR-CHER, a town in France, situated on the river Cher, and belonging to the arrondissement of Tours, in the department of the Indre and Loire. Number of houses above 230. Two leagues and a half E. S. E. of Tours. Many other villages and hamlets in France bear this name.

AZAZEL, a word relating to the institution of the scape-goat, in the Jewish religion, respecting which there are various opinions. St. Jerome and Theodoret call the goat itself by this name. Dr. Spencer says the scape-goat was to be sent to Azazel, by which is meant the devil. M. le Clerc translates it præcipitium, making it to be that steep and inaccessible place to which the goat was sent, and where it was supposed to perish.

AZED, in the materia medica, a name given by the Arabian writers to a kind of camphor, which they make the third in value, placing it after the alcansuri and abriagi. The first of these was the finest of all the kinds of camphor, and was collected tolerably pure from the tree, as it grew in Cansur, the place whence it was named. The second was the same camphor, rendered yet more pure by sublimation; this was a discovery of one of the kings of that country, and the camphor was named from him. The third kind, or azed, was the same with what we now receive from the Indies, under the name of crude or rough camphor. The word azed signifies only large, and was used to express the camphor formed into large cakes. Avicenna says this camphor was gross, of a dusky color, and much less bright and pellucid than the other kinds.

AZEDARACH, or **Azeradach**, in botany, the bead-tree.

AZEEMABAD, the Mahommedan name of Patna, which see.

AZEITAO, a town in Portuguese Estremadura, south of the Tagus, with a manufacture of chintz, and various dye-houses. Population 2350. Five miles N.N.W. of Setuval.

AZEKAH, in ancient geography, a city of the Amorites, in the lot of Judah; situated between Eleutheropolis and Aelia; where the five kings of the Amorites and their army were destroyed by hail.

AZELBURG, a town of Bavaria, formerly called Augusta Acilia.

AZELFOGE, in astronomy, a fixed star of the second magnitude, in the swan's tail.

AZEM, **Asem**, **Assam**, or **Acham**, a country of Asia, north of Ava. See Assam.

AZEMAFOR, in alchemy, red lead.

AZEMECH, the Arabian name for the star, called the virgin's spike.

AZENAY, a town of France, in Poitou, department of the Vendee, arrondissement of Sables d'Olonne. Population 3000. Five leagues north of Sables d'Olonne.

AZERBIJAN, or **Aderbeitzan**, a province of Persia, part of the ancient Media, bounded by Ghilan and the Caspian sea on the east, and on the west by Kurdistan and Armenia. It is separated from the latter by the Araxes, and from the province of Irak on the south, by Kizilozein, or the Golden stream. The climate, which is ordinarily temperate, is cold in winter, and severely felt by the poorer inhabitants, from the scarcity of fuel. The province is watered by the two rivers already named, and by the Jungatty, which is larger than either, and abounds in fish; the Yezdian, Agi, and other lesser streams. On the frontier also is the lake Urumea, which is salter than the sea. Its minerals are lead, copper, saltpetre, and sulphur; here is also a kind of beautiful transparent marble, or jasper, which takes the highest polish, and is used in the buildings of Tabriz, Shiraz, and Ispahan, under the name of Tabriz marble. The cultivation of the land, which consists of fine undulating eminences and rich valleys, is here carried on chiefly by irrigation; the oxen are used for the plough, and the best soil yields from fifty to sixty fold. Most of the villages are surrounded with orchards and gardens, which produce fruit of almost every description. A considerable quantity of wine is made; and provisions are cheap and abundant. The name of this province is said to signify the country of fire, and is supposed to have been derived from the number of fire temples of the Guebres. It is divided into twelve districts, in which are several cities and towns of importance, as Tabriz, or Tauris, the capital, containing 30,000 inhabitants, Urumea, Shebuster, and Maragah.

AZERGUE, **Bahr-el**, or the **Blue River**, the principal stream of Abyssinia, which, rising in the kingdom of Gojam, passes through the lake of Dembea, and, after a winding course through Abyssinia and Sennaar, falls into the Nile above Gerri. Travellers described it as the principal branch of the Nile, till D'Anville showed that this distinction belonged to the Bahr-el-Abiad.

AZEVEDO (Ignatius), a Portuguese jesuit, born in 1527. He was heir to a handsome fortune, but turned his back upon it for a religious life, and went as a missionary to India. In 1570 he was going out a second time, when the ship was taken by pirates, who killed all the missionaries, about forty in number.

AZIMEN, in astrology, certain degrees in the zodiac, which, when they are ascendant, persons born under them are said to be afflicted with lameness, or some other imperfection.

AZIMUTH, in astronomy, an arch of the horizon, intercepted between the meridian of the place and the azimuth, or vertical circle passing through the centre of the object, which is equal to the angle of the zenith, formed by the meridian and vertical circle. It is found by this proportion: As the radius to the tangent of the latitude of the place, so is the tangent of the sun's or star's altitude, for instance, to the cosine of the azimuth from the south, at the time of the equinox.

Azimuth Circles are represented by the rhumbs on common sea charts, and on the globe they are represented by the quadrant of altitude, when screwed in the zenith. On these azimuths is reckoned the height of the stars and of the sun when not in the meridian.

Azimuth Compass, an instrument for finding either the magnetical azimuth or amplitude of an heavenly object. The learned Dr. Knight invented some time ago a very accurate and useful sea-compass, which is at present used in the navy, and will be found described under the article Compass. This instrument, with the following contrivance added by the ingenious Mr Smeaton, answers the purposes of an azimuth and amplitude compass. The cover of the wooden box being taken off, the compass is in a condition to be made use of in the binnacle, when the weather is moderate; but if the sea runs high, as the inner box is hung very free upon its centre, the better to answer its other purposes, it will be necessary to slacken the milled nut, placed upon one of the axes that support the ring, and to lighten the nut on the outside that corresponds to it. By this means, the inner box and ring will be lifted up from the edges upon which they rest when free, and the friction will be increased, and thus to any degree necessary to prevent the too great vibrations which otherwise would be occasioned by the motion of the ship. To make the compass useful in taking the magnetic azimuth or amplitude of the sun and stars, as also the bearings of headlands, ships, and other objects at a distance, the brass edge, designed at first to support the card, and throw the weight thereof as near the circumference as possible, is itself divided into degrees and halves, which may be easlly estimated into smaller parts if necessary. The divisions are determined by means of a catgut line, stretched perpendicularly with the box, as near the brass edge as may be, that the parallax, arising from a different position of the observer, may be as little as possible. Underneath the card are two small weights, sliding on two wires, placed at right angles to each other; which being moved nearer to, or farther from, the centre, counterbalance the dipping of the card in different latitudes, or restore the equilibrium of it where it happens by any other means to be too much out of level There is also added an index at the top of the inner box, which may be put on and taken off at pleasure; and serve for all altitudes of the object. It consists of a bar, equal in length to the diameter of the inner box, each end being furnished with a perpendicular stile, with a slit parallel to the sides thereof: one of the slits is narrow, to which the eye is applied; and the other is wider, with a small catgut stretched up the middle of it, and from thence to the top of the other. There is also a line drawn along the upper surface of the bar. These four, viz. the narrow slit, the horizontal catgut thread, the perpendicular one, and the line on the bar, are in the same plane which disposes itself perpendicular to the horizon, when the inner box is at rest and hangs free. This index does not move round, but is always placed on so as to answer the same side of the box. When the sun's azimuth is desired, and his rays are strong enough to cast a shadow, turn about the wooden box till the shadow of the horizontal thread, or, if the sun be too low, till that of the perpendicular thread, in one stile, or the light through the slit on the other, falls upon the line in the index bar, or vibrates to an equal distance on each side of it, gently touching the box if it vibrates too far: observe, at the same time, the degree marked upon the brass edge by the catgut line. In counting the degree for the azimuth, or any other angle that is reckoned from the meridian, make use of the outward circle of figures upon the brass edge; and the situation of the index bar, with regard to the card and needle, will always direct upon what quarter of the compass the object is placed. But if the sun does not shine out sufficiently strong, place the eye behind the narrow slit in one of the stiles, and turn the wooden box about, till some part of the horizontal or perpendicular thread appears to intersect the centre of the sun, or vibrate to an equal distance on each side of it, using smoked glass next the eye if the sun's light is too strong. In this method another observer will be generally necessary, to note the degree cut by the nonius, at the same time that the first gives notice that the thread appears to split the object. The other observations will be easily performed: only, in case of the sun's amplitude, take care to number the degree by the help of the inner circle of figures on the card, which are the complement of the outer to 90° and, consequently, show the distance from east to west. The azimuth of the stars may also be observed by night; a proper light serving equally for one observer to see the thread, and the other the degree upon the card. It may not be amiss to remark farther, that in case the inner box should lose its equilibrium, and consequently the index be out of the plane of a vertical circle, an accurate observation may still be made, provided the sun's shadow is distinct; for, by observing first with one end of the index towards the sun, and then the other, a mean of the two observations will be the truth.

Azimuth Dial, a dial whose gnomon is perpendicular to the plane of the horizon.

Azimuth, Magnetical, an arch of the horizon intercepted between the azimuth, or vertical circle, passing through the centre of any heavenly body, and the magnetical meridian. This is found by observing the object with an azimuth compass.

AZINCOURT, or Agincourt. See Agincourt.

AZLEEL, the name of an angel mentioned in the book ascribed to Enoch.

AZMUT, or Asmus, an ancient and large town of Natolia, eighty-four miles south-east of Scutari. It is inhabited by Greek christians.

AZO, a town of Asia in the East Indies, seated on the frontiers of Azem, on the river Laquia.

Azo I. and II. earls of Este in Italy, in the tenth century. They claimed their descent from the Accii, a patrician family of ancient Rome Their posterity settling afterwards in Germany, gave rise to the illustrious house of Brunswick; from which that of Hanover and the present royal family of Great Britain are lineally descended.

AZOF, or Azov, a town and fortress of Russia, in the government of Yekatorinoslaw, at the mouth of the Don; lat. 46° 53′ N., long. 39° 14 E. When Dr. Clarke saw it in 1800, it did not contain more than fifty houses; the garrison consisted of a few worn-out invalids, and the works were abandoned to decay. It is surrounded by a swamp; and the interior of the country is a barren desert. It was anciently a considerable port; but the waters of the bay have been diminishing for many years. Tanaïs is mentioned by Strabo, as a settlement of the Bosporani, but Dr. Clarke could find no trace of the ancient town near the site of Azov, and supposes it must have been at the embouchere of the Danaetz or northern arm of the Don. Its ancient history is very obscure; but it passed from the Polovtzes to the Genoese, who called it la Tana; was wrested from them by Tamerlane in 1392; and possessed, after his decease, by the khâns of the Krim till 1471, when it fell into the hands of the Turks. Peter the Great took it by assault, and laid out large sums upon improving its fortifications, but was obliged to give it up at the peace of 1711 The fortifications were demolished, in compliance with the terms made at the peace of Belgrade in 1739; but it was finally ceded to Russia in 1774.

The sea of Azof, named from the above town, was the Palus Mæotis of the ancients, and the Mar de Zabacchi of the middle ages. It is 210 miles long, and about fifty broad; though properly only a bay of the Black sea, with which it is united by the straits of Caffa (Keffeh). Its principal port is Taganrok. Its fish are small, but plentiful; so that 60,000 are often taken at one draught. This sea seems to be gradually filling up with the alluvial earth brought down by the Don; and, during violent east winds, the waters are driven so far back, where it is from thirteen to fourteen miles broad, as to allow a passage over the sand from Jagan Rock to the opposite coast. But when the wind changes the water flows back with such rapidity, that many of those who have attempted to cross this temporary route are overwhelmed by the returning tide. The deepest soundings are from thirty-five to forty feet. The whole surface, except a portion towards the centre, freezes during about a month in winter. A new island, at some distance from the shore, was thrown up on the 5th of September, 1799, with phenomena evidently volcanic.

AZOGA Ships, are those Spanish ships commonly called the quicksilver ships, from their carrying quicksilver to the Spanish West Indies, to extract the silver out of the mines of Mexico and Peru. These ships are prohibited to carry any goods except for the king of Spain.

AZOGUES, a town of Quito, South America, ten miles north-east of Cuenza.

AZOLO. See Acelum.

AZONI; from α privative, and ζονη, country; in mythology, a term anciently applied to such of the gods as were not the private divinities of any particular country, but were acknowledged in every country, and worshipped by every nation. They were superior to the gods called zonæi, who were supposed to inhabit particular parts of the world, and never to stir out of the district or zone that was assigned them. Such in Egypt were Serapis, Osiris, and Bacchus; and in Greece, the Sun, Mars, the Moon and Pluto. They were called by the Romans dii communes.

AZOOPHAGUS; from α, ζωον, animal, and φαγω, to eat; in natural history, a term used by authors to express such insects or animals as feed on herbs, never eating the flesh of any living creature.

AZORES, or Western Islands, a group of islands in the Atlantic Ocean, situated between the thirty-seventh and fortieth degrees of latitude, and about 800 miles from the western shore of Portugal. The name is said to have been given to them on their first discovery by the Portuguese, from Acor, a falcon, on account of the numerous goshawks which they found there. They have also sometimes been called Terceras, from the principal island. The Azores still belong to the crown of Portugal, and are considered as forming three separate clusters. St. Mary and St. Michael lie at the eastern extremity; the five islands of Tercera, Graciosa, St. George, Pico, and Fayal, form a central group; while Corvo and Flores are more detached, and lie farther north-west. The geographers of Arabia, in the middle ages, appear to have had some knowledge of these islands; but they were not known to Europeans till towards the middle of the fifteenth century, when Vander Berg, a Flemish merchant, being driven by contrary winds on these shores, and intelligence of the event reac ing the court of Lisbon, an expedition was fitt out to take possession of them. The Flemin took possession of Fayal, where traces of the are still visible. When Portugal became subje to the Spanish yoke in 1580, these islands fe under Spanish control till the duke of Bragan was raised to the throne in 1640. They we now for a long period much neglected by the hom government; but their situation being mo salubrious, and highly favorable to commerc they encreased and prospered spontaneousl Towns and cities were founded, and the popul tion rose to between 200,000 and 300,000.

The first Portuguese minister whose wisdo was directed to the fostering of these islands wa Pombal; 'he taught the Azoreans that they mig become a people, and Portugal that she mig cease to be a despot. During his mission, th islands were improved by his authority, adorne by his munificence, and extolled by his praise. But the liberal administration of Pombal was succeeded by a sullen and bigoted ministry, composed of the most furious churchmen. A cabinet so formed, soon destroyed the foundations of the rising prosperity which had been laid during the former administration. The islands were inundated with bigoted ecclesiastics; a circumstance which was attended by the destruction of commerce, the extinction of arts and sciences, and the consequent introduction of indigence and barbarity. 'All the islands,' says a late historian, who had resided in the country, 'are under the religious dominion of a sordid and luxurious priesthood, and subject to the civil control of a licentious military power; to a government which condemns the country to a perpetual state of ignorance and sloth, and which confines the whole of its intercourse with the civilised world to the banks of the Tagus, or the port of Lisbon. For the last hundred and fifty years, the peaceable islanders have had to withdraw their eyes from the rest of the world, from every general public care, and fix them steadily and perpetually on the court of Portugal.' Such is, and such has long been the gloomy and miserable state of political degradation in which the Azores are sunk. The spirit of the peopl has been palsied by the arbitrary measures of th government; yet they are described by thos who have been resident among them, as a honest race, who prefer peace to conquest, an who seek distinction in industry rather than i arms; as 'an innocent people, who are as emi nent in the humble vale of domestic life, as th hero in the stormy regions of blood and warfare. Their whole happiness, however, consists in thei domestic and personal comforts, for country the have none. They have no common principle o union; no common bond of action; they form community not insensible to the ties of kindre but uncemented by national feeling; a politic blank in themselves, and comparatively usele to the parent state.' See History of the Azore London, 1813.

In 1591 these islands were, for twelve succes sive days, shaken by violent concussions, an the Villa Franca entirely destroyed. A simil occurrence took place in 1757. There a indeed be little doubt of their volcanic origin, and deep subterranean connexion with very active volcanoes. New islands have frequently been raised from the bottom of the sea, by the power of volcanic action. In 1720 one of these phenomena took place, on approaching which, the next day, an English captain observes, 'we made an island of fire and smoke; the ashes fell on our deck like hail and snow, the fire and smoke roared like thunder or great guns.' Another instance of this kind happened in 1811, near the western extremity of St. Michael, when flames were seen issuing from the sea, accompanied by volumes of smoke and showers of scoria and ashes. The rocks remained just below the surface, with the waves dashing violently over them, and soundings of 80 fathoms, were found almost close to the new island. The presence of subterraneous fire is also indicated by its effect on numerous springs throughout the islands. Some of these are so hot, that they burn the hand. These have of late been considerably resorted to as warm baths, which they answer the more conveniently, as a cold spring is always at hand. In other places, boiling fountains rise to a considerable height, and dissolve in vapor.

The Azores are discovered from a great distance, by a high mountain called the Pico, or peak, bearing a strong resemblance to the peak of Teneriffe, and rising about 7000 feet above the level of the ocean. Their whole appearance is mountainous, but many delightful and fertile valleys separate the rounded and conical hills, of of which the greater part of their surface is composed. The islands are subject to violent winds, and the fury of the waves is sometimes injurious to the low grounds near the sea. Wheat, barley, Indian corn, and valuable woods are produced; but their chief produce is wine and fruits, both of which are exported in large quantities. The wine has some resemblance to Madeira, but is inferior in quality. The oranges are much esteemed.

The best vines are raised on the lofty sides of the Pico, from which wine is made, and exported through Fayal, by which name it is known. It is decidedly inferior to Madeira, but being 50 per cent. cheaper, obtains a considerable sale.

Pico exports a fine species of wood, little inferior to mahogany. The trade was formerly cramped, by being carried on through the medium of Portugal; but, since the emigration of the court, the inhabitants have begun to traffic directly with England and America; a circumstance that has much invigorated this commerce.

Angra, the chief town of Terceras, is the seat of government: but Penta del Gada, or the city of St. Michael, is the largest town of the islands, and the seat of the bishop and principal ecclesiastical authorities.

Azores is also the name of a small group of islands of the Atlantic, north of St. Domingo.

AZORIUM, in old law Latin, azure.

AZOTE; from *α*, privative, and *ζαω*, I live; a name given by the French chemists to a species of air which is destructive of animal life; not fitted for respiration, it is also incapable of supporting combustion. It is said to form about four-fifths of our atmosphere; but being there mixed with the remaining fifth of another air, having properties the reverse of its own, it becomes suited to our existence. See Gas Nitrogen.

AZOTH, in ancient chemistry, the first matter of metals, or the mercury of a metal; more particularly that which alchemists call the mercury of philosophers which they pretended to draw from all sorts of metallic bodies.

Azoth is also a name given to the philosopher's stone. When the Arabs began to study chemistry, their metaphorical and hieroglyphical manner of writing seems to have given rise to a practice of calling the means made use of for bringing metals to perfection, by the name of medicines, and imperfect metals by the name of sick men, and gold by that of a sound and lively person. Hence it was supposed, that these were to be understood literally, especially upon finding the impurities of the baser metals called by the name of leprosies; and hence rose the opinion, that the imperfect metals might be turned into gold, and the bodies of such men into sound ones, by the same preparation!

Azoth, Azotus, or Ashdod, one of the five cities of the Philistines, and a celebrated sea-port on the Mediterranean, situated about fourteen or fifteen miles south of Ekron, between that and Ascalon. It was in this city that the idol Dagon fell down before the ark; and so strong a place was it, if we may believe Herodotus, that it sustained a siege of twenty-nine years by Psammiticus king of Egypt. It was, however, taken by the Maccabees in a much shorter time; who burnt both city and temple, and with them about 8000 men. The town is now called by the Arabs Hasaneyun. It is but thinly inhabited, though the situation is very pleasant. With regard to the houses, those that were built in the time of christianity, and which are now inhabited by Mahommedans, still preserve some claim to admiration; but the modern buildings, though generally of stone, have nothing in them which can attract the notice of a traveller. The streets are pretty broad, the inhabitants mostly Mahommedans, with a few christians of the Greek communion, who have a church under the jurisdiction of the archbishop of Gaza. The town is about a mile and a half in circumference; and has in it a mosque, a public bath, a market-place, and two inns. The number of the inhabitants is between 2000 and 3000. The most remarkable things in this place are an old structure with fine marble pillars, which the inhabitants say was the house that Sampson pulled down; and to the south-east, just out of the town, the water in which the Ethiopian eunuch was baptized by the evangelist Philip. There are several ancient buildings with capitals and pillars standing.

AZPEYTIA, a town of Spain, in the province of Biscay, canton of Guipuscoa, on the river Urola. To this place belongs the village of Loyola, once the property of the celebrated father Ignatius Loyola, founder of the order of Jesuits.

AZPILCUETA (Martin), surnamed Navarre, was born at Verasoa, near Pampeluna, in Spain, in 1494. He was professor of law in several universities, and died at Rome in 1586. His works were printed at Lyons, in 6 vols. folio, 1597.

AZRAH-BEN-AREN, a town of the Arabian Irak, situated on the river Tigris, fifteen miles N.N.W. of Korna.

AZUA, a small town on the south side of the island of St. Domingo, seated on a deep bay.

AZUBAH, the daughter of Shilhi and mother of king Jehoshaphat.

AZUELA, a large river of South America, in the kingdom of Quito, which enters the Amazons.

AZUL, a river of Mexico, in the country of the Appaches, which enters the Gila.

Azul, Rio, or the Blue River, a river of North America, in California.

AZUM, a port of Abyssinia on the Red Sea.

AZ'URE, }
Az'ured, } Fr. *azur*; Ital. *azurro*; from the Arabic *hazul*, the name of a stone brilliantly blue, but not transpa-
Az'urn. }
rent; sky-colored blue.

And on his shield enueloped seuenfold,
He bore a crowned little ermilin,
That deckt the *azure* field with her faire pouldred skin.
Spenser's Faerie Queene, book iii. c. 2.

By whose aid
(Weak masters though ye be) I have bedimm'd
The noon-tide sun, call'd forth the mutinous winds,
And 'twixt the green sea and the *azured* vault
Set roaring war. *Shakspeare. Tempest.*

His spear
He walkt with, to support uneasie steps
Over the burning marle, not like those steps
On heaven's *azure*. *Milton. Paradise Lost.*

By the rushy fringed bank,
Where grows the willow, and the osier dank,
My sliding chariot stays,
Thick set with agate, and the *azurn* sheen
Of turkis blue, and emerald green,
That in the channel strays. *Id. Comus.*

As when the moon, refulgent lamp of night,
O'er heaven's clear *azure* spreads her sacred light;
When not a breath disturbs the deep serene,
And not a cloud o'ercasts the solemn scene:
Around her throne the vivid planets roll,
And stars unnumbered gild the glowing pole.
Pope. Homer's Iliad.

How many bright
And splendid lamps shine in heaven's temple high,
Day hath his golden sun, her moon the night,
Her fix'd and wand'ring stars the *azure* sky.
Fairfax's Trans. Tasso's Jerus. Deliv.

Azure Stone. Azure, among painters, which at present signifies a fine blue color resembling that of the sky, was formerly appropriated to lapis lazuli; which is thus defined: Lustre glistening: fine grained, uneven fracture. It scratches glass, but scarcely strikes fire with steel. Opaque, or translucent on the very edges. Easily broken. Specific gravity 2·85. In a very strong heat it intumesces, and melts into a yellowish black mass. After calcination it forms a jelly with acids. By a late and most interesting research of MM. Clement and Desormes, it appears to be composed of thirty-four silica, thirty-three alumina, three sulphur, and twenty-two soda. (Ann. de Chimie, tom. 57.) In this analysis, however, a loss of eight per cent. was experienced. These chemists consider the above ingredients essential, and the 2·4 of lime, and 1·5 of iron, which they have occasionally met with, as accidental. The best specimens are from China, Persia, and Great Bucharia. They are made red-hot in the fire, and thrown into water to render them pulverisable. They are then reduced to a fine powder, and intimately combined with a varnish, formed of resin, wax, and boiled linseed oil. This pasty mixture is put into a linen cloth, and repeatedly kneaded with hot water: the first water, which is usually dirty, is thrown away; the second gives a blue of the first quality; and the third yields one of less value. The process is founded on the property which the coloring matter of azure-stone has of adhering less firmly to the resinous cement, than the foreign matter with which it is associated. When azure-stone has its color altered by a moderate heat, it is reckoned bad. MM. Clement and Desormes consider the extraction of ultramarine as a species of saponification.

Azure, in heraldry, the blue color in the arms of any person below the rank of a baron. In the escutcheon of a nobleman, it is called sapphire; and in that of a sovereign prince, Jupiter. In engraving, this color is expressed by lines or strokes drawn horizontally. M. Upton and his followers rank this color before gules. This color may signify justice, perseverance, and vigilance; but according to G. Leigh, when it is compounded with

Or	it signifies	Cheerfulness.
Arg.		Vigilance.
Gul.		Readiness.
Ver.		Enterprise.
Pur.		Goodness.
Sab.		Mournfulness.

AZUREA, in entomology, a species of phryganea, with black wings, violet behind. Linn. The lower wings are obliquely violet. It inhabits the north of Europe. Also, in zoology, a species of lacerta that inhabits Africa.

AZUREUS, in entomology, a species of carabus, of an azure color, with red legs and antennæ. It inhabits Leipsic. Fabricius. 2. A species of cimex, of a middle size; dull green color; and yellowish mouth and legs. Inhabiting Guinea. The abdomen is yellowish, with black dots in the middle.

AZURIN, in ornithology, a name assigned by Buffon, Hist. Ois. to the species of turdus, since called specifically cyanurus by Gmelin.

AZURITE, in mineralogy, a blue substance, which occurs principally in Styria. Its crystalline form, as well as some other of its other characters, distinguish it from lazulite, or, as it is more commonly termed, lapis lazuli, of which at its first discovery, it was regarded as a variety.

AZYGOS, in anatomy, a vein rising within the thorax, on the right side, having no fellow on the left; whence it is called *αζυγος*, or vena sine pari. See Anatomy.

AZYMA, or Azymes; from *α* negative, and *ζυμη*, ferment; the feast of unleavened bread among the Jews.

AZYME. Gr. *αζυμος*, without ferment; *α*, the privative, and *ζυμη*, ferment.

They had (they said, i. e. the translators of King James's Bible), on the one side, avoided the scrupulosity of the puritanes, who left the old ecclesiastica

ok them to other, as when they put
tism, and congregation for church;
r hand, had shunned the obscuritie
their *azimes*, tunike, rational, holo-
pasche, and a number of such like,
ate translation was full, and that of
ten the sense, that since they must
he Bible, yet by the language thereof
from being understood.

Preface to King James's Bible.

Azymus, a term much used in
es between the Greek and Roman
atter of whom contend, that the
ass ought to be azymus, unleaven-
n of the paschal bread of the Jews,
aviour, who instituted the sacra-
y of the passover. In the council
was decreed, that the point lay at
of the church; and that either
nleavened bread might be used.
church uses unleavened bread to
a respectable modern commenta-
any respect should be paid to the
tution, in the celebration of this
ice, then unleavened, unyeasted,
be used. In every sign or type,
fying or pointing out that which
lf, should either have certain pro-
accompanied with certain circum-
pressive as possible, of the thing
ead, simply considered in itself,
blem apt enough of the body of
s, which was given for us; but the
was evidently that it should not
this, but also the disposition re-
e who should celebrate both the
he type; and this the apostle ex-
ncerity and truth (1 Cor. v. 6—8),
malice and wickedness. The very
taste of the bread was instructive; it pointed out to every communicant, that he who came to the table of God with malice or ill-will against any soul of man, or with wickedness, a profligate or sinful life, might expect to eat and drink judgment to himself, as not discerning that the Lord's body was sacrificed for this very purpose, that all sin might be destroyed, and that sincerity, *εἰλικρινεια*, such purity as the clearest light can discern no stain in, might be diffused through the whole soul; and that truth, the law of righteousness and true holiness, might regulate and guide all the actions of life'.—*Dr. Adam Clarke on the New Testament.*

AZYMITES, in church history, christians who administer the eucharist with unleavened bread. This appellation is given to the Latin church by the Greek, because the members of the former use fermented bread in the celebration of the eucharist. They also call the Arminians and Maronites by the same name, and for the same reason.

AZYMOUS, something unfermented, or made without leaven, as unleavened bread. Sea biscuit is of this kind; and therefore, according to Galen, less wholesome than bread that has been fermented.

AZZALUM, in the ancient physiology, a species of iron, reputed the most excellent of all, supposed to have been brought from India, whence it was called Indicum; but, in reality, according to some, brought from China.

AZZO (Portius), an Italian lawyer, was a native of Bologna, where he was chosen professor of jurisprudence in 1190 He wrote a work held in great estimation, entitled, A Summary of the Code and the Institutes. He died about 1220.

B.

nd letter of the English and most
s. It is the first consonant, and
its pronunciation is supposed to
leating of a sheep.
e of those letters which the eastern
all *labial*, because the principal
ed in its pronunciation are the lips.
ed by pressing the whole length
er, and forcing them open with
. It has a near affinity with the
P and V, and is often used for P,
rmenians and other Orientals, as
Petrus, *apsens* for *absens*, &c.; and
s for V, as *amabit* for *amavit*, *berna*

al, B was used by the Greeks and
note 2; but among the Romans
with a dash over it (thus $\bar{B}$) for

an abbreviation, though rarely

In music B stands for the tone above A; as B♭, or ♭B, does for B flat, or the semitone major above. A B also stands for bass; and B C for *basso continuo*, or thorough bass.

BA, a small sea-port town of Africa on the Slave coast, where the Dutch have a factory.

Ba, a river of Scotland, in Argyleshire.

BAA-BA, *v. n.* } Lat. *balo*, to cry like a
Baa. *s.* } sheep. The bleating of a sheep.

> Therefore thou art a sheep;
> Such another proof would make me cry *baa*.
>
> *Shakspeare.*

Baadsted, or Batsted, a sea-port town in the province of Schonen, Sweden, situated in a bay of the Cattegat, ten miles north of Engelholm, sixteen south of Helmstadt. Long. 12° 45′ E., lat. 56° 28′ N.

BAAGOE, two small islands in the Baltic belonging to the crown of Denmark, the one lying between the islands of Zealand, Moen, and Falster. Long. 12° 3′ E., lat. 54° 56′ N. And the other in the Little Belt, lon. 9° 49′ E., lat. 55° 19′. N.

BAAL, [כעל, Lord, Syr.] Bel, or Belus; an idol of the Chaldeans, and Phœnicians, or Canaanites. The former worshipped Mars under this name, according to Josephus: who, speaking of Thurus, the successor of Ninus, says, 'To this Mars, the Assyrians erected the first statue, and worshipped him as a god, calling him Baal.' It is probable from what is recorded, 2 Kings xxiii, 5, 11, that the Phœnicians worshipped the sun under the name of Baal. The temples consecrated to this god are called in scripture Chamanim, which signifies places enclosed with walls, in which was kept a perpetual fire. Maundrel, in his journey from Aleppo to Jerusalem, observed some traces of these enclosures in Syria. As the word baal, in the Punic language, signifies lord or master, it doubtless meant the supreme Deity, the Lord and Master of the universe. It is often joined with the name of some false god, as Baal-berith, Baal-peor, Baal-zephon, &c. This deity passed from the Phœnicians to the Carthaginians, who were a colony of Phœnicians; as appears from the Carthaginian names, Hannibal, Asdrubal, &c. according to the custom of the east, where kings and great men added to their own names those of their gods. This deity is also frequently mentioned in Scripture in the plural number, Baalim: which may signify, either that the name Baal was given to several different gods; or that there were many statues bearing different appellations, consecrated to this idol. Arnobius tells us, that Baal was of an uncertain sex; and that his votaries, when they called upon him, invoked him thus; 'Hear us, whether thou art a god or a goddess.' Some learned men think that the Baal of the Phœnicians is the Saturn of the Greeks; which is probable from the conformity there is between the human sacrifices offered to Saturn, and those which the scripture tells us were offered to Baal. Others are of opinion, that Baal was the Phœnician, or Tyrian Hercules; a god of great antiquity in Phœnicia.

Baal. See Baalath-beer.

BAALAH. 1. A city transferred from the tribe of Judah to the Simeonites. 2. The original name of Kirjath-jearim, in Judah.

BAALATH, a city in the tribe of Dan.

BAALATH-BEER, or Baal, a city of the Simeonites, on the south-west border.

BAAL-BECK, or the Valley of Baal, a fertile country of Asia, between Lebanon and Antilibanus, about thirty miles from Damascus; where there was formerly a magnificent temple of the sun, the ruins of which are still visible. Some geographers make it a part, and others the whole of Cœlo Syria; but all agree that it was one of the most pleasant spots on the earth. The ruins of the temple are still admired. See Balbec.

BAAL-BERITH, the god of the Shechemites. Bochart conjectures that Berith is the same as Beroe, the daughter of Venus and Adonis, who was given in marriage to Bacchus; and that she gave her name to the city of Berith, in Phœnicia, and became afterwards the goddess of it. Baal-berith signifies Lord of the covenant, and may be taken for the god who presides over alliances and oaths, in like manner as the Greeks had their Ζευσορκιος, and the Romans their Deus Fidius or Jupiter Pistius. The idolatrous Israelites made Baal-berith their god. Judges viii. 33.

BAAL-GAD, Bagad, or Begad, in ancient mythology, an idol of the Syrians, whose name was composed of baal, lord, and gad, chance or fortune; the god of chance or fortune. After the god of thunder, the god of chance was one of the first worshipped by mankind.

BAAL-HAMON, a place where Solomon had a vineyard, and where probably he sacrificed to Baal, in his dotage, to please his idolatrous wives.

BAAL-HANAN, the son of Achbor, and the seventh king of the Edomites. From his name it appears probable that the worship of Baal had at that early period taken place among the descendants of Esau.

BAAL-HAZOR, a city near Ephraim, about eight miles north-east of Jerusalem, between Bethel and Jericho. In this city Absalom held his treacherous festival for murdering his brother Amnon.

BAAL-HERMON, a part of Mount Hermon.

BAALIM, in antiquity, inferior deities among the Phœnicians. See Baal.

BAALIS, a king of the Ammonites, who sent Ishmael, the son of Nethaniah, to murder the brave Gedaliah, the viceroy appointed by Nebuchadnezzar over the remnant of the Jews, whom he had left in Jerusalem. (Jer. xi. 17.) For this he was justly punished by Nebuchadnezzar, who soon after invaded his country, and reduced it to a desert.

BAAL-MEON, Beon, or Bethbaal-Meon, a city of Canaan, which was taken from the Amorites and given to the Reubenites. (Num. xxxii. 38.) It was afterwards taken by the Moabites, and at last destroyed by the Chaldeans. It had been rebuilt, however, for it was inhabited in the time of the Maccabees.

BAAL-PEOR, Baal-phegor, or Bel-phegor, an idol of the Moabites and Midianites. We are told, that Israel joined himself to Baal-peor, and that Solomon erected an altar to this idol upon the Mount of Olives. Baal-peor has been supposed a Priapus, and that the worship of him consisted in the most obscene practices. Others have thought that as Baal is a general name signifying Lord, Peor may be the name of some great prince deified after his death. Mede supposes, that Peor being the name of a mountain in the country of Moab, on which the temple of Baal was built, Baal-peor may be only another name of that deity, taken from the situation of his temple; as Jupiter is styled Olympius, from his temple built on Mount Olympus. Selden, who is of this opinion, conjectures likewise, that Baal-peor is the same with Pluto; which he grounds upon these words of the Psalmist, Psal. cvi. 'They joined themselves unto Baal-peor, and eat the offerings of the dead;' though by the offerings of the dead, in this passage, may be only meant sacrifices made to idols, who are very properly called the dead, in contradistinction to the true, who is justly and emphatically styled the living, God.

BAAL-PERAZIM, a place in the valley of

it three miles south-west of Jeru-
David routed the Philistines.

Y, and **Baal's River**, a bay and
Greenland, situated between Bear's
elft's Point, opposite Hudson's

LISHA, a place belonging to Sa-
y near Gilgal, the birth place of a
name is not recorded, who, in a
e, miraculously fed 100 men with
loaves. See 2 Kings iv. 42, 44.

IAR, a place near Gibeah, where
enjamin was almost extirpated by
n tribes. See Judg. xx. 33.

a goddess among the Phœnicians.
that she was the same with the
Greeks.

UB, **Beel-zebub**, or **Belzebub**,
the lord of flies,] the idol, or god
es In Scripture he is called the
ils. His name, the God-fly, some
ock appellation bestowed on him
But this seems not very probable,
pper, Ahaziah, called him by this
s Beelzebub was characterised like
, who was worshipped at Cyrene,
er from flies. He had a famous
acle at Ekron. Ahaziah, king of
angerously hurt, sent to this deity
he should be cured. The Jews
viour of driving out devils in the
bub, their prince. Scaliger derives
this deity from Baalim-zebahim,
the lord of sacrifices.

PHON is mentioned in Exodus
posite to Pihahiroth, during the
of the Israelites in the wilderness;
t was a fortified place, built to
tier of Egypt, at the north point of
r an idol erected in that station,
are not agreed. Perhaps both
right. An idol of Baal might be
ort, which would naturally take its
deity.

n d'), a Dutch portrait painter,
and died in 1702. He resided
England, under the patronage of
His son James, who died in 1700,
wenty-seven, was little inferior to
portrait painting, and superior to
ther branches.

S, the followers of one Baanes,
and disseminated the Manichean
early part of the ninth century.

untains in the duchy of Wirtem-
are a part of that long range called
baoba.

Baharas, or **Bacharas**, an ex-
nd of root, said to grow in the
ras, near Mount Lebanon, whence
the account which Josephus gives,
a sort of vegetable phosphorus;
nts it as of a flame color, emitting
the night, and disappearing by day.

n old records, a transport ship.

Peter), a Dutch poet of the
tury, author of 'Georgics,' descri-
pleasures and occuptaions of his countrymen, and of a poem entitled the 'Triton of Friesland.'

BAASHA בעשא, Heb. i.e. pressing together, the son of Ahijah, and the third king of Israel, after its separation from Judah; one of the many monarchs who have waded through blood to a throne. I Kings xv. and xvi. He died A. M. 3013, in the twenty-fourth year of his reign.

BAAT, in the language of the Siamese, answering to tical in that of the Chinese, denotes a weight and coin current in those kingdoms, and weighs about half an ounce.

BABA, a town, district, and river of South America, in the province of Guayaquil, and kingdom of Quito. The district is twenty-two leagues in extent; it abounds in cacoa; and its population amounts to 4000 souls.

Baba, an impostor, who appeared among the Turks in 1240. He maintained that there is but one God, and that he was his messenger. He drew considerable attention, and with a number of followers overran Natolia. His success, however, was short-lived, for he was defeated, and his sect sunk into obscurity.

BABA-DAGI, or **Baba-tagh**, see **Babatagh**.

BABAHOYO, a town, district, and river of South America, in the province of Guayaquil, and kingdom of Quito, in lat. 1° 47′ S. There is a custom-house and royal arsenal in the town, which is a great mart for trade. The district is extremely level and fertile, and abounds in cattle. Cotton, rice, soap, tobacco, cocoa, and fruits are the principal exports.

BABANON, or **Balbanon**, a town of the kingdom of Cambodia, on the river Cambodia. Long. 105° 10′ E. lat., 12° 17′ N.

BABA-TAGH, a large town in the district of Silistria, in European Turkey, situated between two mountains. It has a college, five mosques, and 10,000 inhabitants. Here have generally been the head quarters of the Grand Vizier's army in the wars between Turkey and Russia. Báyazìd I. peopled it with a Tartarian colony, and its name (Saint's Hill) is derived from the tomb of Sarì Saltic Bey, a celebrated Tartarian saint, buried on one of the neighbouring mountains. This mountain-pass was the Dérè (the neck) of the Greeks. Ptolemy places it in lat. 11°.

BAB-BAHA, one of the richest districts of Abyssinia, according to Mr. Bruce, about twelve miles from the river Baha, and near the lake Tzana. This on the south, and Woggora on the north, are the two granaries that supply the rest of the kingdom. It contains a number of small villages; in which the queen and many of her relations have their houses and possessions. These are all surrounded with kolquall trees, as large in the trunk as those of the province of Tigré, but less beautiful.

BAB'BLE, *v.* & *n. s.*
Bab'ler, *n. s.*
Bab'bling, *a.* & *n.*
Bab'blement. *n. s.*

Germ. *babbelen*; Fr. *babiller*. Probably receives its origin from the tower of Babel, when the confusion of tongues took place, and marks a superfluous and improper use of speech. To talk without reflection and without meaning noisy repetition; to betray secrets; to talk muck with unintelligible rapidity. Babbling, among hunters, is when the hounds are too busy after they have found a good scent. It is used figuratively to indicate mere senseless sounds.

He told me meryly, y^t logicke he reckoned but *bablinge* musicke to serue for singers. *Sir Thomas More's Works.*

John had conned over a catalogue of hard words; these he used to *babble* indifferently in all companies. *Arbuthnot.*

The apostle had no sooner proposed it to the masters at Athens, but he himself was ridiculed as a *babbler.* *Rogers.*

This is mere moral *babble.* *Milton.*

Deluded all this while with ragged notions and *babblements,* while the expected worthy and delightful knowledge. *Id.*

With volleys of eternal *babble*
And clamour more unanswerable. *Hudibras.*

To stand up and *babble* to a crowd in an alehouse till silence is commanded by the stroke of a hammer, is as low an ambition as can taint the human mind. *Hawkesworth.*

Utterers of secrets be from thence debarred
Babblers of folly. *Faerie Queene.*

We hold our time too precious, to be spent
With such a *babbler.* *Shakspeare.*

The *babbling* echo mocks the hounds. *Id.*

The *babbling* echo had descried his face. *Addison.*

There at the foot of yonder nodding beech,
That wreathes its old fantastic root so high,
His listless length at noontide would he stretch,
And pore upon the brook that *babbles* by. *Gray.*

BA'BE, *n. s.*
BA'BY, *n. s.*
BA'BISH, *ad.*
BA'BERY. *n. s.*
} Welsh *bahan*; Dutch *babbaerd;* Ital. *bambino*; an infant; a child of either sex in its earliest stage of being. Childish, belonging to infancy, applied to dolls and images and playthings, the playthings of children, and the finery that pleases them.

Who all that piteous storie which befell
About the woefull couple which were slaine,
And theire young bloodie *babe* to him gan tell
With whom whiles he did in the wood remaine
His horse purloyned was by subtille traine. *Faerie Queene.*

Those that do teach your *babes*
Do it with gentle means, and easy tasks. *Shakspeare.*

Come, poor *babe:*
I have heard, (but not believed,) the spirits of the dead,
May walk again: if such thing be, thy mother
Appear'd to me last night; for ne'er was dream
So like awaking. *Id.*

Command my best obedience to the queen,
If she dares trust me with her little *babe,*
I'll show't the king. *Id.*

The *baby* beats the nurse, and quite athwart
Goes all decorum. *Id.*

Sweet *babes!* who like the little playful fawns,
Were wont to trip along these verdant lawns. *Lyttleton.*

The archduke saw that Perkin would prove a runnagate; and it was the part of children to fall out about *babies.* *Bacon.*

If he be bashful and will soon blush;
They call him a *babish* and ill brought up thing. *Ascham.*

So have I seen trim books
With golden leaves and painted *babery,*
Of silly boys, please unacquainted sight. *Sidney.*

BABEL, a city and tower undertaken to be built by the whole human race soon after the flood, and remarkable for the miraculous frustration of the attempt by the confusion of languages. See BABYLON.

BABEL, a town of Egypt, in the Delta, supposed by D'Anville to be the ancient Byblos. It is forty miles north of Cairo.

BABEL (St.), a small town of France, in Auvergne, department of the Puy de Dome, eight miles north-east of Issoire, thirteen east of Brioude.

BAB-EL-MANDEB, or BABELMANDEL, literally the gate of affliction, a promontory and strait at the southern extremity of the Red Sea, about seven leagues broad; the strait forming the communication between that sea and the Indian Ocean. There is a mountain or island in the middle of the strait, sometimes called El Mandel, as well as Perim or Mehùn, which divides the strait into two parts, of which the eastern, though narrowest, is most frequented, as it has deep water, and is free from shoals. 'It is almost three geographical miles in width,' says Bruce, 'and has twenty or thirty fathoms water.' lord Valentia and Niebuhr make the breadth of the strait between Perim and the Asiatic shore the same as Bruce; between it and the coast there are from fifteen to twenty English miles. His lordship observes, that 'Perim should be kept close on the larboard side, in order to avoid a deep bay to the eastward of the cape, which has been sometimes mistaken for the strait.' The wider or western channel is much obstructed by rocks and small islands. The Arabian cape is in lat. 12° 40′ N., long. 43° [illegible] E. Niebuhr's Reisebeschreibung, i. 448. Bruce's Travels, i. 361. Lord Valentia's Travels, ii. [illegible] Vincent's Periplus, i. 111. The island is said to be about five miles in circumference, barren and scarcely inhabited.

BABEN, an island in the Indian Sea, about eighteen miles long, by six in breadth, surrounded by some smaller ones. Long. 130° [illegible] E., lat. 7° 41′ S.

BABENHAUSEN, a market town in the circle of the Iller, Bavaria, with two castles, a Latin school, and 1600 inhabitants. It is [illegible]teen miles S. E. of Ulm, twenty-six W. S. W. of Augsburg.

BABGAUM, a town of Hindostan, in Dowlatabad, twenty-two miles north of Poonah.

BABI, a small island near the west coast of Ceram, in the Eastern Seas. Long. 128° [illegible] E., lat. 3° 5′ S.

BABIC, or BARABEG, a town of Persia, situated in a fertile, uncultivated plain, towards the north-west of the province of Kerman. It has formerly been a fine city, but is now falling [illegible] decay. Here are, however, four gates, from each of which long streets lead to the market-place in the centre, and the dome over the market-place, which is esteemed the largest in Persia, is in complete preservation. Babic being at an equal distance from the cities of Kerman, Shiraz, and Yezd, was in former [illegible] great mart of commerce, the greater part of merchandise which was sent to the port of [illegible]broon, on the Persian gulf, passing through enant-governor resides here, under the of the prince governing Kerman. The to the town are planted with fruit-trees, gardens are said still to surpass those of iraz and Ispahan in beauty and taste. every kind is in such profusion as to have ccasion to the saying, that 'if all Persia, this district, were a desert, Shuhre Babic upply it with fruit.'

ILIUS, an astrologer in the time of ho advised the emperor to put all the men of Rome to death, that he might e danger which seemed to hang over his rom the appearance of a hairy comet. rictly followed this advice.

ILLO, a river of South America, in the n of Granada, which falls into the Ma-

INGLEY, a village in the county of , two miles north-east from Castle Rising, remarkable as being the place in which t Christian church in East Anglia was Some hills in the vicinity are said to d Christian hills from this event.

INGTON (Gervase), bishop of Wor- was born in Nottinghamshire; and sent ity College, Cambridge, of which he was ellow; and in 1578 was incorporated at Oxford. .He, however, made Cam- he place of his residence, where he be- eminent preacher; and being now D. D. de domestic chaplain to Henry, earl of ke. In 1588 he was installed prebend eford, and in 1591 bishop of Landaff. In e was translated to the see of Exeter, and to Worcester in 1597. About this time made queen's counsel for the marches of He was a considerable benefactor to the of the cathedral of Worcester, where he ied in May 1610. Historians agree that a learned and pious man, but his wri- ke those of most of his contemporaries, with puns and quaint expressions. His were printed both in folio and quarto in d 1637.

GTON (Anthony), one of the sufferers in se of the unfortunate Mary, queen of d. He was born of a good family in hire, and inherited a plentiful fortune. distinguished himself by his learning nts, he was recommended by the arch- of Glasgow to the queen; and being na- of an ardent temper, he resolved to himself to her service. Accordingly, he y entered into the scheme of an enthu- priest named Ballard, for dethroning th, but when one Savage undertook to ate the English queen, he agreed in the and engaged five other gentlemen as ac- es. But, after their design was ripe for n, Polly, one of the associates, disco- he whole to Walsingham, secretary of nd they were arrested, condemned, and l, in 1586.

ŒUF (Francis Noel), an active man in ich revolution. From a footman he had a lawyer's clerk, and afterwards became . When the revolution commenced, he assumed the name of Gracchus, and engaged in conducting an incendiary journal, entitled The Tribune of the People; but his concern in a conspiracy being discovered, he was condemned to be guillotined, and the execution was only prevented by his killing himself in prison, in 1797.

BABOLISA, called also BABOLITZNA CARETHNA, a town of Hungary, or rather of Sclavonia, seated near the river Drave.

BABOLSCA, or BABOLZA, a market town of Hungary, in the county of Shumeg and circle of Canischa. It was formerly fortified, and from the middle of the sixteenth to the end of the seventeenth century, alternately in the possession of the Turks and Imperialists. It is now inhabited by Croats, and is twenty-two miles S.S.E. of Canischa.

BABOON, in zoology, the name of that tribe of apes (simia, Linnæus) which have short tails, comprehending the species apedia, sphinx, mormon, maimon, and porcaria. They have very muscular bodies. In the English language baboon has the same application as babouin in the French, of which many accounts have been given by Buffon, Sonnini, and others. Virey observes, that they are a ferocious and very lascivious kind of ape, found in many parts of the old world, and especially in Africa. Their muzzle, he remarks, is a little lengthened in the same manner as that of a dog, and on that account they have sometimes been called synges cyanocephales, and also maggots. They live on fruits, seeds, roots, leaves, insects, &c. In a state of captivity they are altogether untameable, are fond of wine and spirituous liquors; and the females, it is asserted, have an antipathy to the fair sex, as the males have against men. See SIMIA.

BABOUIN A MUSEAU DE CHIEN, of Sonnini (edit. Buffon), in zoology, the simia hymadryas, Linnæus; and dog-faced ape, Pennant.

BABOUR (Sultan), the founder of the Mogul dynasty in Hindostan, was descended from the great Timor, or Tamerlane, and was sovereign of Cabul. While engaged in an expedition against Samarcand, he was deprived of his hereditary dominions, and reduced to the utmost extremity by the Usbecks. But on recovering his fortunes, he invaded Hindostan, and in 1525 overthrew and killed sultan Ibrahim, the last Hindoo emperor of the Patan or Afghan race, and firmly established himself on the throne. He died in 1530. Ferishta, a Persian historian of Hindostan, informs us, that this prince wrote an elegant history of his own life, and is noted as the first Indian sovereign who had the roads he travelled measured after him.

BABRAHAM, formerly BADBURHAM, a small place in the county of Cambridge, four miles north-west of Linton. The manor of this place was formerly in the possession of Sir Horatio Pallavicini, collector of the Pope's dues in the reign of queen Mary; and who, on Elizabeth's accession, detained the money he had gathered. Lord Orford, in his Anecdotes of Painting, cites the following epitaph on him, from Sir John Crew:—

Here lies Horatio Palavazene,
Who robbed the Pope to lend the queene.
He was a thiefe—a thiefe; thou lyest:
For what? he robbed but Antichrist.
Hym Death with besom swept from BAB'RAM
Into the bosom of old Abraham;
But then came Hercules with his club
And struck him down to Belzebub.

Sir Horatio was one of the commanders against the Spanish Armada, and his portrait is preserved in the tapestry of the House of Lords. The register of this parish records the marriage of his widow with Sir Oliver Cromwell, the Protector's uncle.

BABREA, a mountainous district in the province of Gujrat, situated on the peninsula between the Gulfs of Cambay and Cutch. It contains many strong holds and various small rivers, which flow into the Gulf of Cambay. Here is the famous fortress of Chitpour and the temple of Diu. It is subject to the Mahrattas.

BABU, a small island in the Gulf of Siam, near Cambodia. Long. 103° 48′ E., lat. 9° 42′ N.

BABUAN, a small island, said to be about twenty-five miles in circumference, which is the most northerly of the Philippines. Long. 122° E., lat. 19° 43′ N.

BABUYANES ISLES, a number of islands off the north coast of Luzon, the principal Philippine, between the nineteenth and twentieth degrees of north latitude. The largest are named Babuan, Calayay, Dalupiri, Camiguen, and Fuga, and are from twenty to thirty miles each in circumference. Besides these, there are many small rocky islets. Although so far north, the Babuyanes isles are much infested by the piratical cruisers of Magindarao. Their productions are wax, ebony, bananas, cocoas, and plantains.

BABU'L-ALWAB. See DERBEND.

BA'BU'L-BAWA'DI (Gates of the Deserts), or Mahrah, a province on the south coast of Arabia, so named from its being the southern entrance to the great central deserts with which it communicates.

BABYLON.

BABYLON, Heb. BABEL, in ancient geography, the capital of Babylonia or Chaldea, supposed to have been situated in N. lat. 33°, E. long. 42° 46′ 30″; or, according to the observations of M. Beauchamp (Mem. Ac. Sc. Paris, 1787), N. lat. 32° 34′, and E. long. 44° 12′ 30″ upon the river Euphrates, and considered for many ages the wonder of the world. The few vestiges that yet remain of its ancient ruins are placed by most geographical writers, at a town called Hilla or Elugo, about fifteen leagues south-west of Bagdad. It was on or near the site of this city, that the descendants of Noah, according to the Hebrew text, 101 years after the flood; or 531, according to the Septuagint, began to build a city and tower, the top of which should reach to heaven; an impious attempt, which ended in the confusion of their language, and their dispersion over the face of the whole earth. See Genesis, xi. 1—9. That before this period all mankind spoke one language cannot be thought incredible, or even improbable; for since the family of Noah, the only one in the world, are known to have dwelt together, we cannot suppose that any material change could have been effected in their language during a single century, or even the period assigned by the Septuagint calculation. Besides which, numerous histories and traditions still current in Asia, though dashed with superstition and fable, allude to the same events: all tending to confirm, in the most unequivocal manner, the main strokes and outlines of the Mosaic narrative. Josephus ascribes the building of the tower to Nimrod (See Bochart's Phaleg. i. 10.), whose name is also affixed to some of the remains of Babylon. Abydenus (as quoted by Eusebius, Præpar. Evangel. ix. 14.), observes, that the first men, contemning the power and authority of the gods, and relying on their own extraordinary strength, built a lofty tower, which nearly reached the sky, in the place where Babel then stood. But the winds coming to the assistance of the gods, overturned the whole mass upon the heads of its builders, and from its ruins Babylon was afterwards built. The gods also at the same time caused mankind, who had before all spoken the same language, to speak henceforward in different tongues. Plato also, (Polit. p. 272. ed Steph.), relates a similar tradition, wherein he says, that in the golden age, one common language was spoken both by men and beasts, but that Jupiter confounded their tongues as a punishment for their insolence in claiming eternal youth and immutability. After the confusion of languages, the people 'left off to build the city', says Moses; but they must afterwards have resumed it, for in the next verse he adds, that the name of it was called Babel, which signifies confusion, alluding to the confusion in the languages of its builders. It is afterwards mentioned as the chief city of the kingdom of Nimrod, the son of Cush, from which period no further account is given of it in the sacred writings, till the captivity of Israel under Nebuchadnezzar, 738 years before the commencement of the Christian era, when it was so heightened and improved as to be called 'great Babylon,' 'the glory of kingdoms,' 'the beauty of the Chaldees' excellency,' 'the golden city,' 'the lady of kingdoms.' See the prophets Isaiah, Jeremiah, and Daniel. The Greeks have nevertheless, supplied this 1515 years interval of silence, and have given a complete history of the Assyrian and Babylonian empires, together with a magnificent sketch of their renowned metropolis in the zenith of its glory under Semiramis, Nebuchadnezzar, and others. The learned Bochart connects the sacred and profane histories together, by supposing the city of Babylon, and the tower of Belus, mentioned by the Greek historians, to be the same as those related by Moses.

Babylon, according to the concurrent testimony of the ancients, was seated on a plain (the plain of Shinar in Scripture), and surrounded by e places about Babylon, as Abydenus , from Megasthenes, (Euseb Præp. c. 41. p. 41. p. 457.), are said from ng to have been overwhelmed with therefore called the sea; according age of Isaiah, xxi. 1. 'the burden of of the sea.' Jeremiah calls the city ntain, li. 25, on account of the great walls, towers, palaces, and temples, rding to Berosus, as quoted by Jose- infra), resembled mountains. The this metropolis is attributed by some o Semiramis, by others to Belus, who by many to have been the same with eady alluded to, but was indebted for nprovements to Nebuchadnezzar, his erodach, and his widow Nitocris. zzar repaired, enlarged, and embel- such a degree, that he may be said to t, according to his own vain-glorious . iv. 30. Nor is this asserted only e, but likewise by heathen authors, s, Berosus, and Abydenus. (See Antiq. l. x. c. 11. sect. i. t. i. p. 536.) Eusebius, (Præp. Evangel. l. ix. c. ed. Vgeri.) The chief works of Ba- tioned by historians, were the prodi- of the city, the temple of Belus, Ne- ar's palace, the hanging gardens, the river, the artificial lake, and the canals. was surrounded with walls, in thick- -seven feet, in height 350, and in 30 furlongs, or sixty of our miles; Herodotus, who was himself at Ba- most writers give us the same dimen- dorous Siculus, however, diminishes rence of these walls very considera- es somewhat from the height of them; eems to add to their breadth, by say- chariots might drive abreast thereon; dotus writes, that one chariot only upon them; but then he places build- side of the top of these walls, which, him, were but one story high; which well reconcile them together. Those, e height of these walls but at fifty k of them only as they were after the ius Hystaspis, who had caused them n down to that level. The ground e walls formed an exact square, each ch was 120 furlongs, or fifteen miles, and they were all built of large nted together with bitumen, which in grows harder than the brick and it cements. Without the walls, the compassed with a vast ditch, filled and lined with bricks on both sides; earth that was dug out of it served to icks, we may judge of the depth and the ditch from the height and thick- walls. In the whole compass of the ere 100 gates, that is, twenty-five on our sides, all of solid brass. Between these gates, at proper distances, were s; four more at the four corners of uare, and three between each of these the next gate on either side; and e towers was ten feet higher than the ose parts where towers were needful for defence. For some parts of the walls, being upon a morass, and inaccessible by an enemy, they stood in no need of towers. Thus the whole number of these towers amounted to more than 250. From the twenty-five gates in each side of this square, there was a straight street, extending to the corresponding gate in the opposite wall; whence the whole number of the streets must have been but fifty; but they were each about fifteen miles long, twenty-five of them crossing the other twenty-five exactly at right angles. Besides these whole streets, we must reckon four half streets, which were but rows of houses facing the four inner sides of the walls. These four half streets were properly the four sides of the city within the walls, and were each of them 200 feet broad, the whole streets being about 150 of the same. By this intersection of the fifty streets, the city was divided into 676 squares, each of four furlongs and an half on each side, or two miles and a quarter in compass. Round these squares on every side towards the streets stood the houses, all three or four stories in height, beautified with all manner of ornaments: and the space within each of these squares was void, or taken up by gardens, &c. A branch of the Euphrates divided the city into two, running through the midst of it, from north to south, over which, in the middle of the city, was a bridge, a furlong in length, or, as some say, no less than five furlongs, though but thirty feet broad. At each end of this bridge were two palaces; the old palace on the east side, the new one on the west side of the river; the former of which took up four of the squares, and the latter nine. The temple of Belus, which stood next to the old palace, took up another of the squares. That part or half of the city on the east side of the river was the old town, and the other on the west was added by Nebuchadnezzar; both being included within the vast square bounded by the walls. It is supposed, that Nebuchadnezzar, who had destroyed the old seat of the Assyrian empire, Nineveh, proposed that this new one should rather exceed it; and that it was in order to fill it with inhabitants that he transported such numbers of the captives from other countries hither. But notwithstanding his great conquests it was never wholly inhabited; for, Cyrus removing the seat of the empire soon after to Shushan, Babylon fell by degrees to decay. So far was it from being finished according to its original design, that, when Alexander came to Babylon, Q. Curtius tells us, 'no more than ninety furlongs of it were then built;' which can only be understood of so much in length; and, if we allow the breadth to be as much, no more than 8100 square furlongs were then built upon; but the whole space within the walls contained 14,400 square furlongs; and therefore there must have been 6300 square furlongs remaining unbuilt, which, Curtius tells us, were ploughed and sown. Besides this, the houses were not contiguous, but built with a void space on each side.

The next great work of Nebuchadnezzar was the temple of Belus. The wonderful tower, however, that stood in the middle of it, was not his work, but was built many ages before, being the famous tower of Babel, as is commonly supposed. This is said to have been composed of eight pyramidal ones raised above one another, and is stated by Herodotus to have been a furlong in height; but as there is an ambiguity in his expression, it has been disputed whether each of the towers, was a furlong in length, or the whole of them taken together. Even on the latter supposition, it must have exceeded the highest of the Egyptian pyramids by 179 feet, though it fell short of its breadth at the basis by thirty-three. The way to go up was by stairs on the outside round it; whence it seems most likely that the whole ascent was, by the benching in, drawn by a sloping line from the bottom to the top eight times round it; and that this made the appearance of eight towers, one above the other. In these different compartments or stories were magnificent rooms, with arched roofs, supported by pillars, forming parts of the temple when the tower was consecrated, those of the uppermost story being thought most sacred. Over the entire top was an observatory. Diod. Sic. l. ii.; and Calisthenes, the philosopher who accompanied Alexander in the conquest of Babylon, found astronomical observations which carried up the account as high as the 115th year after the flood, or B. C. 2334, and fifteen years from the building of the tower of Babel. Till the times of Nebuchadnezzar, it is thought that this tower constituted the whole of the temple of Belus; but he made great additions, by vast edifices round it, in a square of two furlongs on every side, and a mile in circumference; thus exceeding the square of the temple of Jerusalem by 1800 feet. On the outside of these buildings was a wall, which enclosed the whole; and, from the regularity with which the city was marked out, it is supposed, that this wall was equal to the square wherein it stood, and so is concluded to have been two miles and an half in circumference. In this wall were several gates leading into the temple, all of solid brass. In the temple were several images of massy gold, one of them forty feet in height. The whole weight of its statues and decorations, according to Diodorus Siculus, amounted to above 5000 talents in gold, above twenty-one millions of our money: an equal sum in treasure, utensils, and ornaments, not mentioned, is allowed for.

Next to this temple, on the east side of the river, stood the old palace of the kings of Babylon, which was four miles in circumference, and exactly opposite to it, on the other side of the river, was the new one built by Nebuchadnezzar, eight miles in circumference. The tower or temple stood till the time of Xerxes. But that prince, on his return from the Grecian expedition, having first plundered it of its immense wealth, demolished the whole, and laid it in ruins. Alexander, on his return to Babylon from his Indian expedition, proposed to rebuild it, and make it the seat of his empire, and even employed 10,000 men to clear away the rubbish. But his death happening soon after, a stop was put to all further proceedings in that design.

Nothing was more wonderful at Babylon than the hanging gardens, which Nebuchadnezzar made in compliment to his wife Amyitis; wh being a Mede, and retaining a strong inclinatio for the mountains and forests of her own country was desirous of having something like them i Babylon. They are said to have contained square of four plethra, or 400 feet, on each side; and to have consisted of terraces one abov another, carried up to the height of the wall o the city, the ascent from terrace to terrace bein by steps ten feet wide. The whole pile consisted of substantial arches upon arches, and wa strengthened by a wall surrounding it on every side, twenty-two feet thick. The floors on ea of them were laid in this order: first, on th tops of the arches was a pavement of stone sixteen feet long, and four feet broad; over thi a layer of reeds, mixed with a great quantity o bitumen; over this were two courses of brick, closely cemented together with plaster; an over all these thick sheets of lead, and on thes the earth or mould of the garden. Upo the uppermost of these terraces was a reservoi supplied with water from the river. The othe works attributed to Nebuchadnezzar by Berosu and Abydenus, were the banks of the river, th artificial canals, and the great artificial lake sa to have been sunk by Semiramis. The cana were cut out on the east side of the Euphrate to convey its waters, when it overflowed i banks, into the Tigris, before they reached Bab lon. The lake was on the west side of Babylo and, according to the lowest computation, fo miles square, 160 in compass, and in depth thi five feet, as Herodotus, or seventy-five, as Meg thenes will have it; the former, perhaps, me sured from the surface of the sides, and the la from the tops of the banks that were cast upon them. This lake was dug to receive t waters of the river, while the banks were build on each side of it. But both the lake, and t canal which led to it, were preserved after t work was completed, being found of great u not only to prevent all overflowings, but to k water all the year, as a common reservoir, to let out, on proper occasions, by sluices, for t improvement of the land. The banks were b of brick and bitumen, on both sides of the riv to keep it within its channel; and extended each side throughout the whole length of the ci and even farther, according to some wri Within the city they were built from the bott of the river, and of the same thickness with t walls of the city itself. Opposite to each str on either side of the river, was a brazen ga the wall, with stairs leading down from it to t river: these gates were open by day, and s by night. Berosus, Megasthenes, and Abyde attribute all these works to Nebuchadne but Herodotus tells us, the bridge, the ban and the lake, were the work of the queen Ni cris already alluded to, who may have fini what Nebuchadnezzar left imperfect. Such the description ancient historians give of t city; which, if the accounts are not exaggerat must have exceeded every specimen of hum grandeur that has yet appeared. Many of t moderns, however, are of opinion that these d criptions are exaggerated; although it is cert that few other arguments can be brought aga

ity of them, than that we do not now see
designs executed.

aking of Babylon by Cyrus, as prophe-
the scriptures, forms one of the most
and important events in the variable
ancient history. War had commenced
the Medes and Persians, and Babylo-
n the reign of Neriglissar, and had been
on with very bad success on the side of
named people. Cyrus, who commanded
dian and Persian army, having subdued
ral nations inhabiting the great continent
e Ægean sea to the Euphrates, bent his
owards Babylon. Nabonadius, hearing
mediately advanced against him. In the
ent which ensued, the Babylonians were
; and the king, retreating to his metro-
as blocked up and closely besieged by
But the reduction of the city was no com-
erprise. Its walls and towers were well
, and the place stored with all provisions
ty years. Cyrus, despairing of being
ake it by storm, caused a line of circum-
to be drawn quite round it, with a large
p ditch; reckoning, that if all communi-
ith the country were cut off, the besieged
e obliged to surrender through famine.
troops might not be too much fatigued,
ed his army into twelve bodies, appoint-
body its month to guard the trenches;
esieged, looking upon themselves to be
langer, insulted him from the ramparts,
ised all his efforts. Cyrus having spent
e years before Babylon, without making
ress in the siege, at last thought of the
stratagem, which put him in possession
He was informed that a great annual
y was to be held at Babylon; and that
itants on that occasion were accustomed
the whole night in revelry. On this
accordingly sent a strong detachment to
of the canal leading to the great lake,
rs at a certain time, to break down the
ich was between the lake and the canal,
rn the whole current into the lake. At
time he appointed one body of troops
ce where the river entered the city, and
where it came out; ordering them
in by the bed of the river as soon as
ld find it fordable. Towards the even-
ened the head of the trenches on both
the river above the city, that the water
charge itself into them; by which means,
eaking down of the great dam, the river
drained. Then the two bodies of troops
he channel; the one commanded by
and the other by Gadates: and finding
left open, they penetrated into the
e city without opposition. Those who
the palace opening the gates to know
of this confusion, the Persians rushed
e palace, and killed the king as he came
et them. Cyrus took possession of
in the name of his uncle Cyaxares II.
cripture Darius the Mede: A. M. 3468.
anner in which this city was taken is
e, from its coincidence with the pro-
that event in Isa. xlv. 1, 2. 'The
d gates' were literally opened before
him, and the gates were 'not to be shut,' &c. On these prophecies, see bishop Newton, bishop Lowth on Isaiah, &c.

With Babylon fell the empire of Babylonia, according to the striking language written on the wall of the palace the same night in which the city was taken, and interpreted by the prophet Daniel; 'Mene, God hath numbered thy kingdom and finished it.' See Dan. ch. v.

The history of the ruins of this great city is all which we have now to present to the reader. An insurrection, under Darius Hystaspes, B. C. 500, provoked that prince to overthrow the walls and gates which had been left by Cyrus. We also learn from a fragment of Diodorus Siculus, produced by Valesius, and from him quoted by Vitringa, Comment. in Jesaiam, ch. xiii. vol. 1, p. 421, that one of the kings of Parthia sent many of the Babylonians, under the most trivial pretences, into slavery; burnt the forum, together with some of the temples; and demolished the best parts of the city, B. C. 130 years. Diodorus Siculus, l. ii. asserts, that in his time, B. C. 44, only a small part of it was inhabited, and that the greater part of the space within the ancient walls was tilled. Strabo, who wrote fourteen years after him, in his l. xvi. p. 1073, applies to Babylon what a comic poet, said of Megalpolis in Arcadia: 'The great city is now become a great desert,' Pliny, H. N. l. 6. ch. xxx., published A. D. 66, affirms that it was reduced to solitude by the neighbourhood of Seleucia. Pausanias, A. D. 153, says, Arcad. ch. xxxiii. p. 668. ed. Kuhuii, 'that of Babylon, the greatest city the sun ever saw, nothing remained but the walls.' Maximus Tyrius, Diss. 6., and Lucian, Επιον, sive Contemplantes, mention it as a neglected place; the latter intimating that in a little time it would be sought for and not be found, like Nineveh. Eusebius has preserved an oration of Constantine the great, in which that emperor states, that he himself was upon the spot, and beheld the desolate and miserable condition of the city. St. Jerome informs us, that about the close of the fourth century, it was converted into a chase to keep wild beasts in, for the diversion of the Persian kings, that all was in the utmost state of desolation, except the brick walls, which were occasionally repaired to prevent the animals from escaping; a circumstance which literally fulfilled the prophecy of Isaiah xiii. 21. Hieron, Comment. on Isa. ch. xiii. ch. xiv. vol. 3. p. 111, 115. ed. Benedict. Benjamin of Teudela, who lived in the twelfth century, affirms, Itin. p. 66, that some ruins were still to be seen of Nebuchadnezzar's palace, into which travellers were afraid to enter on account of the serpents and scorpions that inhabited the interior. Texeira, a Portuguese, is cited by Bochart, and Prideaux, as giving a similar account of this place; various other travellers have further confirmed them. Tavernier says, that at the division of the Tigris, a short distance from Bagdad, is the foundation of a city which, from its appearance, may have been a league in compass; of which some of the walls yet standing occupy sufficient breadth to allow six coaches to pass upon them abreast, and are composed of burnt bricks ten feet square and three feet thick. This place is represented by the chronicles of the country as the seat of ancient Babylon. Hanway says, Trav. vol. 4. pt. 3. ch. xx. p. 78, that the ruins of Babylon lie fifteen leagues south of Bagdad, and are now so much effaced by time, that scarcely any vestiges of them remain to point out the original situation of the city. Niebuhr, who lived in the eighteenth century, gave a description which has thrown a light upon the question respecting the original site of Babylon. But the most complete and satisfactory account is given by Mr. Rich, who resided for some time at the court of the Pasha of Bagdad, on the part of the East India Company, and possessed greater advantages for such an inquiry than any of his predecessors. He expected, he says, to have found on the site of Babylon both more and less than he actually met with; more, because he supposed he should have been able to have identified some of the ancient buildings, which was quite impossible; 'less because he could form no conception of the prodigious extent of the whole mass of ruins, their size, solidity, and the perfect state of some of their parts.'

The traces of the city begin to show themselves near Mohaeril, a khan or inn, nine miles from Hillah, and nearly thirteen leagues south of Bagdad; the whole country round exhibiting here and there, detached masses of bricks and bitumen. Three mounds attract particular attention by reason of their extraordinary magnitude. Hillah, in lat. 32° 28′ N., stands east of the Euphrates, and on that side also, with the exception of two small elevations, and one very considerable ruin, are all the remains of any antiquity. Two miles above Hillah commences a mound or enclosure of circular appearance, thought to have been the ancient boundary wall. It includes an area of two miles and a half one way, and one mile and one third the other. On the east side two straight dykes or walls of earth run from north to south, parallel with the Euphrates, and forming, together with the river and the ends of the enclosure above-mentioned, an oblong area, containing three principal mounds of rubbish, which rise more than 100 feet above the level of the river. The largest mass of these ruins, called by the Arabs Makallebah, pronounced by the natives Majellibéh, in English *subverted*, is what Rennell and Petro della Valle thought to be the tower of Belus. The figure is oblong, and the sides which face the cardinal points measure as follows: the northern side 200 yards, the southern 219, the western 136, and the eastern 192; the highest elevation is 141 feet. On the south-east angle appeared something like a turret, and in the rubbish were found whole bricks, having on them inscriptions in CUNEATIC CHARACTERS, for which see.

The next important ruin is called by the Arabs El Kair, the castle, a mile to the south of the former; consisting of walls and piers, eight feet in thickness, facing, like the former, the cardinal points. It is adorned with buttresses, pilasters, and niches of fine burnt brick, laid in lime mortar of extraordinary tenacity. Beneath this building are subterranean caverns and passages, which are still unexplored. In the neighbourhood is an atheleh, *tamarix articulata*, considered by the natives to have been coeval with the city. Mr. Rich also found another curious ruin, west of the river, and about six miles south-west of Hillah, which he coincides with Niebuhr Reise, ii. 289, in considering as the celebrated tower of Belus; especially as the Arabs call it Birs Nemrùd, the tower of Nimrod. (The word birs, which embarrassed Mr. Rich, being nothing else than the Persian word borz, as Gesenius has justly expressed it.) This celebrated remain, which the Jews denominate the prison of Nebuchadnezzar, forms a mound of fine burnt bricks, with inscriptions on them; it is of oblong figure, 762 yards in circumference, and on the east side about sixty feet in height; but rises on the west in a conical form to the height of 198 feet, the base occupying a breadth of 28.

No works of art yet discovered in these ruins have been thought beautiful; but bricks and gems, with inscriptions and sculptures similar to those brought from Persepolis, evince the early connexion between the Babylonian and Persian empires. The inscriptions on the lower side of the bricks were buried in a substratum of mortar, and not designed to be seen or read; whence it has been inferred, that they are charms or magical formulæ to protect the building from the attack of demons and evil spirits. For a further illustration of this subject we refer the reader to Gesenius, in Ersch's Encyclo.; Rich's Memoir on the Ruins of Babylon, 1818; Maurice's Observations on ditto, 1816; and the numerous other works already quoted.

BABYLONIA.

BABYLONIA, or CHALDEA, a renowned kingdom of Asia, said to have been the most ancient in the world, lying between thirty and thirty-five degrees of north latitude, and bounded, according to Ptolemy, on the north by Mesopotamia, on the east by the Tigris, on the west by Arabia Deserta, and on the south by the Persian Gulf and part of Arabia Felix. Babylonia was founded by Nimrod, the grandson of Ham, who is also said to have built Nineveh, the ancient capital of Assyria. Various have been the conjectures of the learned respecting these two kingdoms; some supposing them to have been the same, others imagining that Babylonia was an early province of Assyria, although it is plain from the best authorities, that they remained perfectly distinct till the time of Ninus; who having conquered the former, reduced it to a tributary dependance upon the latter; in which state it continued till the effeminate reign of Sardanapalus; as did also Media, Persia, Egypt, and other kingdoms. At length Arbaces, governor of Media, taking advantage of that monarch's indolence, threw off his allegiance by the adva of Belesis, a Chaldean priest; the Babylonians followed the example, and with the assistance of the Persians, and other allies to whom the tyranny of their Assyrian lords was equally odious, attacked the empire on all sides, and after a determined and obstinate perseverance, overthrew the Assyrian army, besieged Sardanapalus in his capital, and made themselves masters of the empire, A. A. C. 821.

The whole territory was then divided into three kingdoms, viz. the Assyrian, Median, and Babylonian. Arbaces retaining the supreme authority, fixed his imperial residence at Ecbatana, in Media; nominated Belesis to the government of Babylon, and Phul to that of Assyria; at the same time conferring upon them the title of kings. Phul, who reigned during the time of Menahem, king of Judah, re-established and greatly enlarged the Assyrian empire; and at his death bequeathed the kingdoms of Assyria and Babylonia to his two sons, the former to Tiglath-Pileser, the latter to Nabonasser, in the year B. C. 747.

From this period to the year 625, B. C. when Nabopolasser began his reign, nothing remarkable occurs in the history of Babylon, except that Assaradinus, or Esarhaddon, brother and successor of Senacherib, king of Assyria, took possession of that kingdom, B. C. 680; and that upon his death, B. C. 668, the kingdoms were again separated. The Scripture mentions only five Assyrian kings, viz. Pul, Tiglath-Pileser, Shalmaneser, Sennacherib, and Esarhaddon. In the twentieth year of Nabopolasser, B. C. 606, in the reign of Chynalidan, the Sardanapalus of the Greeks, Nineveh was taken and destroyed, by the united armies of the Medes and Babylonians, under Cyaxares and Nabopolasser, when the seat of the empire was transferred to Babylon. This Nabopolasser, called also Nebuchadnezzar, was the father of the celebrated Nebuchadnezzar, whose history is so famous in the sacred writings, and who commenced his reign 604 years B. C. two years after the conquest of Nineveh. This prince raised the empire of Babylon to its highest pitch of glory, and spread his dominions over a wide extent of territory, stretching from Media on the north-east, beyond Egypt on the south-west, and comprehending the several kingdoms of Assyria, Persia, Syria, Phœnicia, Canaan, North Arabia, Idumea, and Egypt. After Nebuchadnezzar, little is known of Babylon, except the names of his successors, Evil-Merodach and his queen Nitocris, his son-in-law Neriglissar, Laborosoarchod, the son of the latter, and Nabonadius, the son of Evil-Merodach by Nitocris, Labynitus of Herodotus, and Belshazzar of Scripture, in whose reign the city of Babylon was broken up, and the empire extinguished by Cyrus the Persian, 538 years B. C. See Anc. Un. Hist. vol. iii. p. 367—437. Rollin's Anc. Hist. vol. ii. p. 1—153.

In the early ages of the world, Babylonia was known by the names of Shivar, or Shivaar, which appellation it seems to have retained in the time of Daniel. In the days of Abraham, a king of Shivar is mentioned called Amraphel, who under Chedarlaomer, king of Elam, or Persia, made war upon the Canaanites. The name of Babylon is supposed to have been derived from the tower of Babel, and that of Chaldæa from Chaldæans or Chasdim. Joseph Ant. l. i. c. 7. These names were not synonymous; Babylonia, properly intending the country more immediately in the neighbourhood of Babylon, and Chaldæa, the territory lying south of the former, and reaching downward as far as the Persian gulf. Both nevertheless are commonly employed as general names of the whole empire, and in that sense are taken indifferently for each other, Chaldæa being the name used in Scripture, and Babylonia the most common in profane authors. *Diodor. Sic.* l. ii. c. 11, 12. *Strabo*, l. xvi. sub. init.

The chief cities of Babylonia were Babylon, Vologsia or Vologesocerta, built by Vologesis, king of the Parthians, on the Euphrates, about the time of Vespasian; Barsita, thought to be the Borsippa of Strabo, sacred to Diana and Apollo, and called Borisippeni, from its being the habitation of a certain sect of the Chaldæans; Idiccara, on the Euphrates and the borders of Arabia Deserta; Coche, in the island of Mesene, formed by the Tigris, Saura, and Pombeditha, of which the situation is very uncertain.

The air of this country was for the most part salubrious and temperate, though occasionally subject to hot pestilential winds. The rains according to Herodotus, were seldom, the deficiency of which the inhabitants supplied, by inventing wheels and engines for watering the land, and also by cutting numerous canals by which the waters of the Euphrates and Tigris were carried in different directions, and diffused over the whole surface of the empire. The southern parts of Babylonia between the rivers, have been compared to the Delta of Egypt, in consequence of their natural and artificial islands, and from their lying under the same parallel of latitude. The region of Chaldæa between the mountains of Babylon and the Euphrates, is also well watered by lakes, rivers, and canals, which greatly refresh every part of the surface, and its produce, according to Herodotus, l. i. c. 193, is by this means rendered equal to a third part of Asia.

In short, it was one of the finest countries for corn in the world; and so luxuriant, that it commonly yielded a hundred times more than what was sown; and, in good years, it yielded three hundred times more than it received. The leaves of its wheat and barley were four inches broad. 'Though I know,' says Herodotus, 'that the millet and the sesame of that country grow to the size of trees, I will not describe them particularly, lest those who have not been at Babylonia should think my account fabulous.' They had no oil but what they made from Indian corn. For producing fig-trees, vines, and olives, it was not famous, but the country abounded with palm-trees, which grew spontaneously; and most of them bore fruit, of which the inhabitants made bread, wine, and honey. Some of them, as of other trees, the Greeks called male ones. They tied the fruit of the male to the trees which bore dates; that the mosquito, leaving the male, might cause the date to ripen, by penetrating it; for without that assistance it came not to maturity. Musquitoes breed in the male palms as in the wild fig-trees. The great fertility of the soil was owing, in a great measure, to the inundations of the Euphrates and Tigris, in the months of June, July, and August, caused by the melting of the snow upon the mountains of Armenia. From the circumstance of its being low, flat, and well watered, this country abounded with willows, and was hence called the 'Valley of Willows,' as Prideaux (Con. pt. i. b. i. p. 105,) after Bochart corrects the text, Is. x. 5, 7. Israel, Ps. cxxxvii. 1, 2, sat down in their captivity by the rivers of Babylon, and hung their harps upon the willows.

To facilitate the purposes of commerce the Babylonians navigated the Euphrates, by means of small boats, nearly round, constructed like wicker baskets, which were covered with hides, and guided by two oars, or paddles. These boats had neither head nor stern; but, being of different sizes, were very useful for carrying their goods to Babylon; whence they returned by land, the strength of the current not allowing them to return by water

The inhabitants of this country were divided, not only into two great tribes, Babylonians and Chaldeans, properly so called, but into numerous inferior sects and divisions, three of which are said to have fed upon nothing but fish, dried in the sun, formed into paste, and afterwards baked in rolls as a substitute for bread.

Physicians are said to have been unknown in Babylonia, to supply the want of which they carried their sick into the public forum, to consult those who passed by on the nature and cure of their diseases. Every one who saw a sick person was obliged to go to him to inquire into his distemper, and tell him if he ever had the same himself, or if he knew any one that had, and how he was cured; together with such other inquiries as the sick person might be induced to propose. They embalmed their dead with honey; and in their mourning imitated the Egyptians.

The laws of marriage among the Babylonians were peculiar, and were celebrated by the ancient writers for their wisdom and utility. On what ground the reader will determine. When the girls were marriageable, they were ordered to meet in a certain place, where the young men likewise assembled. They were then sold by the public crier; but he first sold the most beautiful one; and then put up others to sale, according to their degrees of beauty. The rich Babylonians were emulous to carry off the finest women, who were sold to the highest bidders. But as the young men who were poor could not aspire to have fine women, they were content to take the more homely, with the money which was given with them, from the produce of the sale of the finest women! A father could not give his daughter in marriage as he pleased; nor was he who bought her allowed to take her home, without giving security that he would marry her But, after the sale, if the parties were not agreeable to each other, the law enjoined that the money should be restored. The inhabitants of any of their towns were permitted to marry wives at these auctions. Such were the early customs of the Babylonians. But they afterwards made a law, which prohibited the inhabitants of different towns to intermarry, and by which husbands w punished for treating their wives ill.

The Babylonians were not without consid able taste for the arts. Of their music and poe we have certain records. They also excelled architecture and sculpture; also in the arts designing and casting metals. Their manuf tories of rich embroideries, sumptuous vestmen magnificent carpets, and fine linen, were famou and their purple constituted a considerable arti of eastern commerce. They were naturally commercial nation, for which their metropo afforded peculiar advantages; seated, as it w in the midst of the world, and having, by mea of its two chief rivers, an easy access to northern and western parts; and, by means the Persian Gulf, to the western.

At first, it is said, the Babylonians worshipp only the sun and moon; but they soon mul plied their divinities. They deified Baal, Bel, Belus, one of their kings, and Merodach-Bal dan. They also worshipped Venus under t name of Myletta She and Belus were the pri cipal deities of the Babylonians. The practi of sacrificing human victims is said to have be first introduced into the world by the Babylon ans in the worship of these deities. They count their day from sun-rise to sun-rise. Th solemnised five days in the year with great ma nificence, and almost the same ceremonies w which the Romans celebrated their Saturnal and the Babylonians, generally speaking, w very much addicted to judicial astrology. Th priests, who openly professed that art, w obliged to commit to writing all the events the lives of their illustrious men; and on fancied connexion between those events and t motions of the heavenly bodies, the princip of their art were founded. They pretended t some of their books, in which their histori transactions and revolutions were accurately co pared with the courses of the stars, w thousands of years old. And although we m dispute this assertion of their astrologers, it nevertheless, true that they had made a lo system of observations; and that some of the were extant in the days of Aristotle, which w older than the Babylonish empire. See ASTR NOMY, Index.

The government of Babylon was despotic, a the succession hereditary. Their potentates sumed divine titles, and received divine hono which shows the spirit and force of the Scriptu comparison between Babylon and papal Ro The officers by whom the affairs of governm were administered, were both civil and milita and were divided into three classes. The fi had the charge of virgins, and of their dispo in marriage. They were also to judge in ca of adultery, and all matters connected with t rights and institutes of matrimony. The seco took cognizance of thefts; and the third of other crimes. The chief officers of the kin household were the captains of the guard, w executed the commands of the sovereign. T prince of the eunuchs, who had the care of t youth of the palace; the prime minister, rese bling the Turkish vizier, who sat in the kin gate to hear complaints and pass judgmen and a master of the magicians, whose province it was to satisfy the king on all subjects that related to futurity.

Of the criminal laws of Babylon little is known, except that their punishments were cruel and capricious—as beheading, cutting to pieces, turning the house of the criminal into a dunghill, burning, &c. Such is the account commonly given by historians of this renowned and ancient monarchy, one of the four great empires of the earth, so frequently employed in the hand of Providence as a scourge to execute the divine threatenings upon surrounding nations. This, however, is but a general view, and for a more detailed description, we refer the reader to the authorities already quoted.

Babylon is a term employed in the Scriptures, particularly in the first epistle of St. Peter, and the book of Revelation, to designate a great enemy to the Christian faith; and is generally applied, by Protestants, to the Roman Catholic church; which, from her pride, oppressive and persecuting spirit, but chiefly from her idolatry, bears great resemblance to Babylon. Whoever reads the sixth chapter of Baruch, and compares it with the history of the papal apostacy, will see the justice and force of the application. See also *Whitby's* Paraphrase, vol. ii. p. 661, and 753.

Babylonia Cura, in astrology, the art of casting nativities.

BABYLONIAN, Babylonius, is used, in ancient writers, for an astrologer, or any thing relating to astrology.

BABYLONICA. See Babylonics.

Babylonica Texta, a rich sort of weavings, or hangings, denominated from the city of Babylon, where their practice of interweaving divers colors in the hangings first obtained. Hence also Babylonic garments, Babylonic skins, Babylonic carpets, housings, &c.

BABYLONICS, Babylonica, in literary history, a fragment of the ancient history of the world, ending at 267 years before Christ; and attributed to Berosus, a priest of Babylon, about the time of Alexander. The Babylonics are sometimes cited in ancient writers by the title of Chaldaics. They are generally consonant with Scripture, whence the author is usually supposed to have consulted the Jewish writers. Berosus speaks of an universal deluge, an ark, &c. He reckons ten generations between the first man and the deluge; and marks the duration of the several generations by saroi, or periods of 223 lunar months; which, reduced to years, differ not much from the chronology of Moses. Only a few imperfect extracts are now remaining of the work; preserved chiefly by Josephus and Syncellus. Annius of Viterbo, to supply the loss, forged a complete Berosus!

BABYLONII Numeri, Babylonican numbers, or the computation of astrologers.

BABYROUSSA, in zoology, a synonyme of a species of sus. It is the horned hog of Grew; porcus indicus babyroussa dictus of Ray; and baby-roussa of Buffon. In the arrangement of the French naturalists, it belongs to the genus cochons and order pachydermes. See Sus.

BAC, or Back, in brewing or distilling, a large flat tub, or vessel, wherein the wort is put to stand and cool. There is a branch of trade called back-making, for furnishing these vessels.

Bac, in navigation, is used for a praam, or ferry-boat. See Back.

BACA, an ancient valley in Palestine. Some commentators suppose it to be the same with the valley of Rephaim, where the Jews, in journeying to their solemn festivals, stopped for refreshment, as it abounded with springs, and was well shaded with mulberry trees, which the name Baca signifies. See Psalm lxxxiv. 6.

Baca, or Baza, a town of Spain, in Granada, situated in a valley called Hoya de Baza. It is encompassed with old walls, has a ruined castle, and a church, dedicated to the Virgin Mary. The land about it is well cultivated, and is fertile in wheat, wine, honey, hemp, and flax, being watered by the Guadalentin. It is thirty-five miles north-west of Almeira.

BACACUM, a town of the Nervii in Gallia Belgica; now Bavay, in Hainault.

BACAIM, or Bazaim, a sea-port town of the Deccan of Hindostan, on the Malabar coast.

BACALAL, a lake of Mexico, in the province of Yucatan, forty miles long, and sixteen broad. It is thirty-six miles south-west of Valladolid.

BACANO, a lake of Italy, in the pope's territories, from which issues the river Varca.

BACANORA, a town of North America, in New Mexico, seated on the Hiagra.

BACANTIBI, in ecclesiastical history, wandering clerks, who strolled from church to church. The word seems formed by corruption from vacantivi.

BACASERAY, a considerable town in the peninsula of Crim Tartary. It was taken from the Turks by the Russians, in 1736. It is seventy miles south of Precop.

BACBAKIRI, in ornithology, the name by which le Merle à plastron noir de Ceylan of Buffon, is known at the Cape of Good Hope, because its note very clearly expresses the syllables bac-ba-ki-ri. It is the green-pye from Ceylon of Edwards; Ceylon thrush of Latham; and turdus Zeylonus of Linnæus.

BACCA, Berry, in botany, is used to signify such fruits as consist of pericarpium full of juice and seeds, without any valves.

BACCÆ Bermudienses, in the materia medica, the berries of the sapindus, or soap-berry tree.

BACCALARIA, in middle age writers, a kind of country farms, consisting of several manses.

Baccalaria Dominicaria, Baccalaria Indominicata, were more particularly used for a farm belonging to the lord, and kept in his own hands.

BACCALAUREATE, Baccalaureatus, a bachelor's degree; the first degree in arts and sciences in an university. See next article.

BACCALAUREUS; Latin, from bacca laurea, a bay berry; a bachelor in an university, so called because anciently their heads, at graduation, were adorned with a garland of bay berries.

BACCARACH, a town of Germany, in the lower Palatinate; formerly imperial and free, but now subject to Prussia. It is famous for excellent wine; and is situated on the east shore of the Rhine, thirty-eight miles south of Coblentz, and forty-eight north of Deux Ponts. This place is mentioned by historians in the twelfth century, and the customs formerly collected on the Rhine here were so productive, that it received the name of the golden toll. A spring, of an oily consistence, rising in the middle of the river near it, affects both the smell and color of the water to a considerable distance. The island of Heilesen, just below it, contains a monument, to be seen at low water, adorned with sculptures and inscriptions. It appears to have been an ancient altar of Bacchus; is still termed Bacchi ara, and is said to give the town its name. There are large slate quarries in the neighbourhood, and the town contains manufactures of powder and starch. Population about 1200. The town suffered much in the thirty years war. The count palatine formerly resided in the castle of Stalecke, near this town.

BACCARUM, in entomology, a species of acarus, found on gooseberries, currants, and other fruit-trees. Also a species of cimex, of a fulvous color. Inhabits Europe.

BACCASERY. See Bacaseray.

BA'CCATED, *adj.* Lat. *baccatus*, beset with pearls; having many berries.

Johnson from Dict.

BACCATUS, in botany, berried, or soft, like a berry; an epithet for a capsule, a drupe, a silique, and an aril, as Baccata capsula, a capsule with a fleshy coat. Baccata drupa, a drupe with a succulent coat, &c.

BACCHÆ, in antiquity, 1. the priestesses of Bacchus, who celebrated the mysteries of that god; 2. the ivy crowns or garlands worn by the priests of Bacchus, in offering sacrifices to him.

BAC'CHANAL, *n. s.* } From Lat. *bac-*
Bac'chanalian. *ad.* & *n. s.* } *chanalia.* The feasts and revels of Bacchus, the god of wine; a worshipper of Bacchus, or, in modern usage, a drunkard or riotous person.

> Ha, my brave emperor! shall we dance now the Egyptian *bacchanals*, and celebrate our drink?
>
> *Shakspeare.*
>
> What wild fury was there, in the heathen *bacchanals*, which we have not seen equalled?
>
> *Decay of Piety.*
>
> Both extremes were banish'd from their walls;
> Carthusian fasts, and fulsome *bacchanals*. *Pope.*
> And now Childe Harolde was sore sick at heart,
> And from his fellow *bacchanals* would flee. *Byron.*

BACCHANALIA, Bacchanals, religious feasts in honor of Bacchus, were celebrated with much solemnity among the ancients, particularly the Athenians, who even computed their years by them, till the commencement of the Olympiads. They are sometimes also called orgia, from the Greek οργη, fury; on account of the madness and enthusiasm wherewith the people appeared to be possessed at the time of their celebration. They were held in autumn, and took their rise from Egypt; whence, according to Diodorus, they were brought into Gree by Melampus. The form of the solemnity d pended at Athens, on the archon, and was, a first, exceedingly simple; but, by degrees, i became encumbered with a number of ridiculous ceremonies, and attended with much dissoluteness and debauchery; insomuch, that the Romans grew ashamed of them, and suppressed them by a decree of the senate throughout all Italy. The women had a great share in these solemnities, which were said to have been instituted on their account; for a great number of them, according to the tradition, attended Bacchus to the co quest of the Indies, carrying in their hands the thyrsus (i. e. a little lance, covered with ivy and vine leaves), and singing his victories and triumphs. The ceremony was kept up after Bacchus's deification, under the title of Bacchanalia, and the women were installed priestesses thereof, under that of Bacchæ, or Bacchantes. These priestesses, at the time of the feast, ran through the streets, and over the mountains, covered with tiger's skins, their hair dishevelled, their thyrsus in one hand, and torches in the other, howling and shrieking, Ευοι σαβοι! Ευοι Βακχε! Iω Iακχε! or Iω Βακχε! Of the men, some represented Pan, others Silenus, others satyrs. Men and women met promiscuously at the feast, quite naked, except only that the vine leaves, and clusters of grapes, bound their heads and loins; here they danced and jumped tumultuously, and, with strange gesticulations, sung hymns to Bacchus, till, being weary and giddy, they fell. Livy has left us a particular account (xxxix. 8, &c.) of the enormities practised at these festivals, and which led to their suppression. There were two principal Bacchanalia held annually, viz.

Bacchanalia Dionysia, or Majora, the greater Bacchanalia, so called from one of Bacchus's names (see Bacchus), celebrated in the city about spring time; and

Bacchanalia Lenæa, or Minora, the lesser festival, celebrated in the open fields about autumn.

Bacchanalia signify also pictures, or basso relievos, whereon the feast is represented, consisting chiefly of dancing, nudities, and the like. There are antique Bacchanals, still seen on several ancient friezes. Those painted by Poussin are excellent.

BACCHANTES, priestesses to Bacchus.

BACCHARACH Wine, an excellent kind of wine, by many mistaken for Rhenish; but from which Portzius observes it differs in color, taste, flavor and strength. See Baccarach.

BACCHARIS, in botany, Ploughman's Spikenard: a genus of the polygamia superflua order, and syngenesia class of plants; ranking in the natural method under the forty-ninth order, compositæ discoides. The characters are: a naked receptacle, and hairy pappus; with a cylindrical imbricated calyx, and feminine florets mixed with the hermaphrodites. There are seven species, all natives of warm climates; of which the two following chiefly merit notice. 1. B. Halimifolia, or Virginia groundsel tree, a native of Virginia and other parts of North America. It grows about seven or eight feet high, with a crooked shrubbery stem; and flowers in October 2. B

r African tree groundsel, a native of
of Good Hope, as well as of Peru and
n parts of America.

ris, in pharmacy, a sweet ointment
g the ancients, so called perhaps from
plant being a principal ingredient

II, in fabulous history, a kind of ma-
e form of goats, said to have been used
in his wars against the giants. Rudbeck
wo kinds of Bacchi, one made like the
am, wherewith Jupiter demolished the
rtifications; the other contrived to cast
whence the Greeks are conjectured to
ed their idea of the chimera.

IIC, something relating to the ceremo-
cchus. The celebrated intaglio, called
Angelo's ring, is a representation of a
ast.

c Song is sometimes used for a chanson
r composition to inspire jollity. But
proper sense, it is restrained to a dithy-
or hymn.

IICA, in botany, Hedera, or ivy.

IINI (Benedict), a learned monk of
enth century, was a native of Parma,
d at the age of sixteen into the Bene-
nastery of Mount Cassino. He after-
elled as secretary to the abbot of Fer-
length he settled at Parma, and esta-
eriodical journal, which he conducted
ears with learning and success: but
ms created enemies, who procured his
t. He retreated to Modena, and re-
journal under the patronage of the
odena. He was also historiographer
an to the duke. He subsequently be-
t of a Benedictine monastery, and was
n professor of ecclesiastical history at
here he died in 1721, aged seventy.
was one of the most learned men of his
s literary journal extends to nine vols.
des which, he published De Sistrorum
: Differentia, Bononiæ, 1691, 4to.;
siasticæ Hierarchiæ Originibus, Mo-
3, &c. &c.

IIS, or Balus, king of Corinth, suc-
father Pruinnides, and reigned with
ration and equity, that to commemo-
his successors were called Bacchidæ.
hidæ afterwards becoming numerous,
one as president, with regal authority.
tution was, however, overturned by
making himself absolute.

IIUS, a follower of Aristoxenus, sup-
Fabricius to have been tutor to the
Marcus Antoninus, and consequently to
about A. D. 140. He wrote in Greek
roduction to music in dialogue, which
s has published with a Latin translation.

us, in ancient poetry, a foot composed
syllable and two long ones; as ĕgēstās.
s name from the god Bacchus, because
tly entered into the hymns composed in
The Romans called it likewise æno-
odius, and saltans; and the Greeks

us and Bithus, two renowned gladia-
ual age and strength; whence the proverb, expressive of equality, Bithus contra Bacchium.

BACCHUS, in heathen mythology, the god of wine. He is seldom named in modern times, but as a sensual encourager of feast and jollity: he was regarded in a more respectable light by the ancients, who worshipped him in different countries under the appellations, in Egypt, of Osiris; in Mysia, Fanaces; in India, Dionysius; Liber, throughout the Roman dominions; Adoneus, in Arabia; and Pentheus, in Lucania. Mythologists furnish reasons for all these different names. The Greeks and the Romans ascribed to the Bacchus whom they worshipped, the several actions and attributes of the many divinities known by that name, and by other equivalent denominations in different countries. However, antiquity chiefly distinguished two gods under the title of Bacchus; the one of Egypt, the other of Thebes in Bœotia.

The Bacchus of Egypt was the son of Ammon, and considered as the same with Osiris. He was brought up at Nysa, a city of Arabia Felix, whence he acquired the name of Dionysius, or the god of Nysa; and was the conqueror of India. This Bacchus was one of the elder gods of Egypt, although, according to Sir Isaac Newton, he flourished but one generation before the Argonautic expedition. Bacchus, says Hermippus, was potent at sea, conquered eastward as far as India, returned in triumph, brought his army over the Hellespont, conquered Thrace, and left music, poetry, and dancing there.

Bacchus of Thebes was the son of Jupiter by Semele, the daughter of Cadmus, and ranked as the youngest of the Grecian deities. Diodorus Siculus tells us, that Orpheus first deified the son of Semele by the name of Bacchus, and appointed his ceremonies in Greece, to render the family of Cadmus, the grandfather of the Grecian Bacchus, illustrious. According to this author, it was the son of Semele who invented farces and theatres, and who first established a musical school, excepting from all military functions such musicians as discovered great abilities in their art: on which account, says the same author, musicians formed into companies have since frequently enjoyed great privileges. Pausanias, in his Attics, speaks of a place at Athens consecrated to Bacchus the singer: whence it should seem that Bacchus was regarded by the Athenians not only as the god of wine, but of song; and it must be owned, that his followers, in their cups, have not been uninclined to pay him service in this way. Indeed it is clear, that in none of the origies, processions, and festivals, instituted by the ancients to the honor of this prince of bons-vivans, music was forgotten. We find not only that musicians, male and female, regaled him with the lyre, the flute and the song; but that he was accompanied by fawns and satyrs, playing upon timbrels, cymbals, bag-pipes, and horns; these Suidas calls his minstrels, and Strabo gives them the appellation of Bacchi, Sileni, Satyri, Bacchæ, Lenæ, Thyæ, &c. These representations have furnished subjects for the finest remains of ancient sculpture; and the most voluptuous passages of ancient poetry are descriptious of the orgies and festivals of Bacchus.

Bacchus, is represented on medals in the form of a boy or youth, an old man, or a female, as in figs. 1, 2, 3; he is mostly naked, as in fig. 4, where he stands under the shadow of a v branch, near an altar, at which the emp Commodus is offering him divine honors.

Fig. 1.

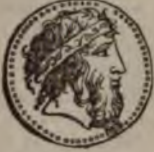


Fig. 2.

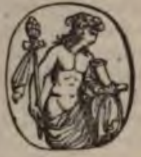


Fig. 3.

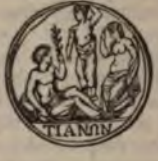
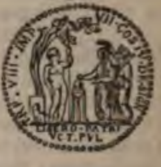


Fig. 4.



Bacchus, in entomology, a large species of scarabæus, that inhabits the Cape of Good Hope. 2. A species of curculio. 3. A species of monoculus.

Bacchus, in ichthyology, a name given by some to the myxon, a fish of the mullet kind, remarkable for the red color of its lips, and the extremity of the covering of the gills. See Mugil.

BAC'CHUS-BOLE. See Botany.

BACCHYLIDES, a famous Greek poet, the nephew of Simonides, and the contemporary and rival of Pindar. Both sung the victories of Hiero at the public games. Besides Odes to athletic victors, he was the author of love verses, prosodies, dithyrambics, hymns, pæans, parthenia, or songs to be sung by a chorus of virgins at festivals, &c. The chronology of Eusebius places the birth of Bacchylides in the eighty-second Olympiad, about A. A. C. 450.

BACCI'FEROUS. See Botany.

BACCINA, or Baccinum, a basin to hold water to wash the hands, The holding the basin, or waiting at the basin, on the day of the king's coronation, was an ancient tenure in serjeantry.

BACCIO (Francisco Bartolomeo, or Bartelemi di S. Marco), a celebrated history and portrait painter, was born at Savignano near Florence, in 1469, and was a disciple of Roselli; but his principal knowledge in the art was derived from Da Vinci. He understood the true principles of design better than most masters of his time, and was also a considerable painter of perspective. Raphael, after he had quitted the school of Perugino, studied the art of uniting colors under him, as well as the rules of perspective. Some years after the departure of Raphael, Baccio visited Rome; and by the observations he made on the antiquities and the works of Raphael, which, by that time, were universally admired, he improved much, and manifested his abilities by a picture of St. Sebastian, which he finished at his return to Florence. This was so well designed, so naturally colored, and had so strong an expression of agony, that it was removed from the convent where it was exhibited, as it had made too strong an impression on the imaginations of many women. He is accounted the first inventor of the machine called a layman by the artists, and which is still in general use. Upon that he placed his draperies, to observe, with great exactness, their natural and their most elegant folds. A capital picture of the ascension by Baccio, is in the Florentine collection. He died in 1517.

Baccio, or Baccius (Andrew), a celebrated physician of the sixteenth century, born at St. Elpideo. He practised physic at Rome with great reputation, and was first physician to pope Sixtus V. The most scarce and most valuable of his works are, 1. De Thermis. 2. De Naturali Vinorum Historia. 3. De Venenis et Antidotis. 4. De Gemmis ac Lapidibus pretiosis.

BACCI'VOROUS, *adj.* From *bacca*, a berry, and *voro*, to devour, Lat. Devouring berries.

BACCOFOE, in botany, a fruit like the banana, very common in Guinea, but whiter, thicker and shorter. The taste and smell are agreeable; and some pretend that on cutting it through transversely, there is the figure of a crucifix on each side of it. Phil. Trans. No. 108.

BACCULI. See Bacilli.

BACH, a town of Lower Hungary, in the county of Tolu, seated on the Danube.

Bach (John Sebastian), a celebrated musician, born at Eisnach in Germany in 1685. He was patronised by the duke of Saxe Weimer, who appointed him his musician in 1708; and at Dresden he gained a victory over a famous French organist, whose vanity led him to challenge all the German musicians. As an organist, he was thought equal to Handel, and the excellence of his compositions testify him to have been among the foremost in the science. He died in 1754.

Bach (Charles and John), sons of the above, were both very eminent as performers and composers of music. Charles lived at Hamburgh in 1773, and John was in England in 176

BACHA, a river of Asiatic Russia, which joins the Jenesei on the right.

Bacha, in ornithology, a species of falcon, figured in the fifteenth plate of Le Vaillant's work on the birds of Africa. It is about the size of the common buzzard, and naturally belongs to that tribe of rapacious birds.

BACHAUMONT (Francois le Coigneux de), a French poet. He was counsellor to the parliament, but his love of ease and pleasure made him give up his post and renounce his profession. Contracting an intimacy with Chapelle, he was joined with him in writing A Journey to Montpelier, in which there is much vivacity displayed; besides which he wrote several other works, in a humorous style. He died at Paris in 1702, aged seventy-eight.

Bachaumont (Louis-Petit), a French writer, born at Paris, was author of Secret Memoirs towards a History of the Republic of Letters in France, thirty-six volumes, 12mo. and other works. He died in 1771.

ELIER (Nicholas), an eminent French
id architect. He was a pupil of Mi-
elo, and ornamented the churches of
his native city. He died about 1554.

ELOR, *n. s.* } This is a word of
LORSHIP, *n. s.* } very uncertain etymo-
ot being well known what was its ori-
e. Junius derives it from βάκηλος, a
l stature but of effeminate and imma-
; Menage, from *bas chevalier*, a knight
vest rank; Spelman, from *baculus*, a
s, from *buccella*, an allowance of pro-
he most probable derivation seems to
acca laurûs, the berry of a laurel or
elors, being young, are of good hopes,
s in the berry. Dr. Lawrence ob-
t Menage's etymology is much con-
the practice in our universities of call-
helor, Sir. In Latin, *baccalaureus*.
r of these words describes the person;
is condition. The more common ac-
is a man unmarried. Its secondary
one who takes his first degree at the
in any profession; and its last and
ete sense, is a knight of the lowest

ever see a *bachelor* of threescore again?
Shakspeare.

said I would die a *bachelor*, I did not
uld live till I were married. *Id.*

mother, living yet, can testify,
as the first fruit of my *bachelorship*. *Id.*

ld the latter, that is to say, Mr. Spectator,
bachelors that their lives and actions had
uliar that he knew not by what name to
Spectator.

boy, new *bachelor* of arts, I chanced to
st the pope. *Ascham.*

before your honour, in behalf of Martinus
bachelor of physic. *Mart. Scriblerus.*

OR, in ancient times, was a denomina-
to those who had attained to knight-
had not a number of vassals sufficient
eir banner carried before them in the
ttle; or if they were of the order of
were not of age to display their own
ut obliged to march to battle under
banner. It was also a title given to
aliers who, having made their first
received the military girdle accord-
d it served to denominate him that
me another in a tournament the first
er engaged.

on, in the six companies of merchants
as a name given before the Revolu-
e elders, and such as, having served
, had a right to be called by the mas-
ardens to be present with them, and
a in their functions.

ORS, in the livery companies of Lon-
hose who are not yet admitted to the
hese companies generally consist of a
o wardens, the livery, and the bache-
are yet but in expectation of dignity in
ny, and have their functions only in
on the master and wardens. They
lled yeomen.

ORS, in the university sense, are per-
have attained to the baccalaureats, or first degree in arts, divinity, law, or physic. This degree in some universities has no existence. It was first introduced in the thirteenth century by pope Gregory IX. The following regulations are observed respecting it in Oxford and Cambridge: In the university of Cambridge, a bachelor of arts must reside the greater part of twelve several terms, the first and last excepted. The statutable exercises before admission, ad respondendum quæstioni (a form in which the father of the college asks each student a question before his graduation), are two acts and two opponencies. A bachelor of divinity must be a master of arts of seven years standing: his exercises are, one act, after the fourth year, two opponencies, a concio ad clerum, and an English sermon. The ten-year men, who are candidates for this degree, are tolerated by a statute 12 Eliz. They are persons who, being twenty-four years of age and upwards, are admitted at any college to take the degree of bachelor of divinity after ten years. During the last two years they must reside the greater part of three several terms. Their exercises are the same as in the regular course. A bachelor of laws must be of six years standing complete, and must keep the greater part of nine several terms. The exercise is one act. A bachelor of physic must keep the greater part of nine several terms, and may be admitted any time in his sixth year: the exercise is one act and one opponency. A bachelor of music must enter his name at some college, and perform a solemn piece of music as an exercise prior to his degree.

In the university of Oxford, a bachelor of arts must keep sixteen terms, and appear once as a respondent in the schools. A bachelor of divinity must be master of arts of seven years standing: his exercises are one act, two opponencies, and a concio ad clerum after the fifth year. A bachelor of laws must be a master of arts of three years standing: his exercises are one act and two opponencies. A bachelor of medicine must be a master of arts of one year standing his exercises are one act and one opponency. A bachelor of music must produce a competent testimonial that he has applied himself to that science during seven years, and must perform a piece of music of five parts publicly in the music school.

Bachelors, Knights, the most ancient, but the lowest order of knights in England; known by the name of knights only. They are styled knights bachelors, either (according to some) as denoting their degree, quasi bas chevaliers; or, according to others, because this title, like the fortune of an unmarried man, does not descend to their posterity. The custom of the ancient Germans was to give their young men a shield and a lance in the great council; this was equivalent to the toga virilis of the Romans. Before this they were not permitted to bear arms, but were accounted as part of the father's household, after it, as part of the public. Hence some derive the usage of knighting, which has prevailed all over the western world since its reduction by colonies, from those northern heroes. Knights are called in the Latin equites aurati; aurati, from the gilt spurs they wore, and equites, because they always served on horseback; for it is observable that almost all nations call their knights by some appellation derived from a horse. They are also called in our law milites, because they formed a part, or indeed the whole of the royal army, in virtue of their feudal tenures: one condition of which was, that every one who held a knight's fee (which in Henry II.'s time amounted to twenty pounds per annum) was obliged to be knighted, and attend the king in his wars, or pay a fine for his non-compliance. The exertion of this prerogative, as an expedient to raise money in the reign of Charles I. gave great offence, though warranted by law and the recent example of queen Elizabeth. At the restoration it was, together with all other military branches of the feudal law, abolished, and it now only exists in an honorary title, conferred by the king's lightly touching the person, who is then kneeling, on the right shoulder with a drawn sword, and saying, 'rise, sir.' See Knight and Nobility.

On bachelors, or unmarried men, the Roman censors frequently imposed fines. Dion Halicarnasseus mentions an old law by which all persons of full age were obliged to marry. But the most celebrated law of the kind was that made under Augustus, called the lex Julia de maritandis ordinibus; by which bachelors were made incapable of legacies or inheritances by will, unless from their near relations. This brought many to marry, according to Plutarch's observation, not so much for the sake of raising heirs to their own estates, as to make themselves capable of inheriting those of others. The rabbins maintain, that, by the laws of Moses, every body, except a few particular persons, is obliged in conscience to marry at twenty years of age; and that this makes one of their 613 precepts. Hence those maxims, so frequent among their casuists, that he who does not take the necessary measures to leave heirs behind him, is not a man, but ought to be reputed a homicide. Lycurgus was not more favorable to this state of life. By his laws, bachelors are branded with infamy, excluded from all offices civil and military, and even from the shows and public sports. At certain feasts they were forced to appear, to be exposed to the public derision, and led round the market-place. On one occasion, the women led them in this condition to the altars, where they were obliged to make amende honorable to nature, accompanied with a number of blows and lashes with a rod. To complete the affront, they forced them to sing certain songs composed in their own derision. The Christian religion has been supposed to be more indulgent to the bachelor state; because the apostle Paul has recommended it as preferable (as it certainly was) during the early ages of Christianity, when a man was in danger of suffering, not only in his own person or property, but in those of his nearest and dearest connexions, for the sake of religion; which rendered such persecutions more dreadful and severe upon the married than the unmarried. The ancient church, overlooking this principle, upon which the apostle's advice is evidently founded, recommended the bachelor state, as well as that of perpetual virginity in the other sex, as not onl more perfect than the married state, but even highly meritorious: and thus gave birth to th absurd system of monasteries, nunneries, and th celibacy of the clergy; which for so many ages h burdened Europe, with thousands of idle dron of both sexes. In the canon law, we find junctions on bachelors, when arrived at puber either to marry or to turn monks and profe chastity in earnest. In England there was tax on bachelors, after twenty-five years of ag £12. 10s. for a duke; and a common person 1 by 7 Wil. III. 1695. They were also taxed by Mr. Pitt in an extra-duty on their servants.

Bachelors of the Church, baccalarii ecclesiæ, an inferior class of ecclesiastics, mentioned in some old records, which speak of the bishop with his canons and baccalarii.

Bachelor's Pear, in botany, a name sometimes given to the solanum mammosum.

BACHER, a lofty ridge of mountains in Styria, circle of Cilly, near the Drave, about sixty-five miles in circuit.

BACHIAN, or Batchian, one of the Molucca islands in the eastern ocean, separated by a narrow channel only, from the island of Gilolo. It is about fifty miles long, and twenty in average breadth, but much narrower in the middle than towards each end. The native prince of this island early formed an alliance with the Spaniards and Portuguese, who were expelled by the Dutch in 1610. It is fertile in sago, and other fruits of the climate; and was formerly considered as producing better cloves than any other island of these seas. On this island the Dutch fixed their principal settlement, before Amboyna attained its present pre-eminence. Bachian, covered with forests, contains a burning mountain; beds of coral adorn its shores, and gold has been classed among its products. It is under the government of a sultan, the sovereign of Oby, Ceram, Goram, and another contiguous islet. The inhabitants are Malay Mahommedans, who are considered as the most eastern disciples of the Arabian prophet. The chief town is Sabongo. Latitude about 0° 48′ S.; and long. 128° 0′ E.

BACHILERIA, in old law Latin, the commonality, as distinguished from the nobility.

BACHILLI. See Bacilli.

BACHMUTH, or Bakhmoud, the chief town of a circle in the government of Ekaterinoslav, in European Russia, situated on a river of that name, which falls into the Donetz. It is well fortified, and has a citadel for the protection of its salt-works. It has belonged successively to the governments of Voronetz and New Russia, and was erected into its present government in 177 The circle of Bachmuth borders on the government of Voronetz, and the country of the Don Cossacs, and is one of the most fertile parts of Little Russia. When a scarcity of water prevails in the summer, the supplies are brought from the Donetz. 104 miles N. N. W. of Azoph, and 11 east of Ekaterinoslav.

BACHNEU, or Bonghu, a market town Transylvania, in the county of Kokelburg, on th river Little Kokel.

BACHU. See Baku.

BACILLARIA, in entomology, a genus

he class vermes, and order infusiora: its body consisting of cylindrical, straw-like filaments. The only species is the B. paradoxa, seu vibrio paxilifer.

BACILLI, or Baculi, in medicine (from baculus, Lat. a staff,) such compositions as are made up in a cylindrical figure, like a stick.

BACILLUM, in medicine, dim. of baculum, a troche in the form of a stick.

Bacillum, in chemistry, iron instruments in the shape of a baculum, or staff.

BACK, *n. s. v. a.* & *adv.* } Sax. bac, bæc;
Backed, *adj.* } Germ. *back*. The noun signifies the hinder part of the body; the outer part of the hand opposed to the palm; the thick part of any tool opposed to the edge. The adverb denotes the situation of being, and the direction of going. The adjective points out the back as the adjunct of being; the simple circumstance of having a back; and the verb is used in various senses, intimately connected and easily traced to one common source, the original etymon, namely, to mount on the back of a horse; to break a horse; to place upon the back; to maintain, to strengthen, to support, to defend, to justify, and to second.

His *back*, or rather burthen, show'd
As if it stooped with its own load. *Hudibras.*

Did they not swear, in express words,
To prop and *back* the house of lords?
And after turn'd out the whole houseful. *Id.*

Part following enter; part remain without,
And mount on others *backs*, in hopes to share.
Dryden.

The epistles being written from ladies forsaken by their lovers, many thoughts came *back* upon us in divers letters. *Id.*

Factious, and fav'ring this or t'other side,
Their wagers *back* their wishes. *Id.*

Methought love pitying me, when he saw this,
Gave me your hands, the *backs* and palms to kiss.
Donne.

Those who, by their ancestors, have been set free from a constant drudgery to their *backs* and their bellies, should bestow some time on their heads.
Locke.

He might conclude, that Walter would be upon the king's *back*, as his majesty was upon his.
Clarendon.

As the voice goeth round, as well towards the *back* as towards the front of him that speaketh, so does the echo: for you have many *back* echoes to the place where you stand. *Bacon.*

And all within it full of wyndingsis
And hidden ways that scarce an hound by smell
Can follow out those false footsteps of his
Ne none can *backe* returne that once are gone amis.
Spenser. Faerie Queene.

At the hour of death, all friendships of the world bid him adieu, and the whole creation turns its *back* upon him. *South.*

A great malice, *backed* with a great interest, can have no advantage with a man, but from his expectations of something without himself. *Id.*

Back you shall not to the house, unless
You undertake that with me. *Shakspeare.*

That roan shall be my throne,
Well, I will *back* him strait. O Esperance!
Bid Butler lead him forth into the park. *Id.*

He hath a garden circummur'd with brick,
Whose western side is with a vineyard *backed*. *Id.*

As I slept, methought
Great Jupiter, upon his eagle *back'd*,
Appear'd to me. *Id.*

Belike he means
Back'd by the pow'r of Warwick, that false peer,
T' aspire unto the crown. *Id.*

You are strait enough in the shoulders, you care not who sees your back; call you that *backing* of your friends? a plague upon such *backing!* give me them that will face me. *Id.*

He sent many to seek the ship Argo, threatening that if they brought not *back* Medea, they should suffer in her stead. *Raleigh's History of the World*

Where they are, and why they came not *back*,
Is now the labour of my thoughts. *Milton*

Back to thy native island might'st thou sail
And leave half-heard the melancholy tale. *Pope*

So rag'd Tydides boundless in his ire,
Drove armies *back* and made all Troy retire. *Id.*

This Cæsar found, and that ungrateful age,
With losing him went *back* to blood and rage.
Waller

I've been surpris'd in an unguarded hour,
But must not now go *back*; the love, that lay
Half smother'd in my breast, has broke through all
Its weak restraints. *Addison*

How shall we treat this bold aspiring man?
Success still follows him, and *backs* his crimes.
Id

To thee, Almighty God to thee,
Our childhood we resign;
'Twill please us to look *back* and see,
That all our lives were thine. *Watts.*

First Fear his hand its skill to try,
Amid the chords bewildered laid,
And *back* recoil'd he knew not why,
E'en at the sounds himself had made.
Collins

Direct us how to *back* the winged horse;
Favour his flight and moderate his course.
Roscommon.

These were seconded by certain demilaunces, and both *backed* with men at arms. *Sir J. Hayward.*

The patrons of the ternary number of principles, and those that would have five elements, endeavour to *back* their experiments with a specious reason.
Boyle.

We have I know not how many adages to *back* the reason of this moral. *L'Estrange.*

Back, in the menage, and among farriers. A horse's back should be straight, not hollow, which is called saddle-backed: horses of this kind are generally light, and carry their heads high, but want in strength and service. A horse with a weak back is apt to stumble. In the French riding-schools, to mount a horse *a dos*, is to mount him bare-backed, without a saddle.

To Back an anchor, in maritime affairs, *empenneller une ancre*, Fr. to carry out a small anchor, as the stream or kedge, ahead of the large one, by which the ship usually rides, in order to support it, and prevent it from loosening, or coming home in bad ground. In this situation the latter is confined by the former, in the same manner that the ship is restrained by the latter.

To Back astern in rowing, *scier à culer*, Fr. is to manage the oars in a direction contrary to the usual method, so as that the boat or vessel impressed by their force, shall retreat or move with her stern foremost.

Back the starboard oars! *scie tribord! avec les avirons*, Fr. the command to confine the above management to the oars on the right hand side of the boat only, in order to turn her round more speedily to that direction.

To Back and fill, *coiffer et faire servir les voiles*, Fr. is an operation generally performed in narrow rivers, when a ship has the tide in her favor, and the wind is against her.—Exam. 'We were obliged to back and fill occasionally to get up the Thames.'

To Back the sails, *mettre à scier*, Fr. is to arrange them in a situation that will occasion the ship to retreat or move astern, in consequence of the tide or current in her favor, and the wind contrary, but light. This operation is particularly necessary in narrow channels, when a ship is carried along sideways by the strength of that tide or current, and it becomes requisite to avoid any object that may intercept her course, as shoals, or vessels under sail, or at anchor: it is also necessary, in a naval engagement, to bring a ship back, so as to lie oppposite to her adversary, when she is too far advanced in the line; and also in fleets under convoy, where ships are too much crowded, by the above operation they may be preserved from falling aboard each other. See the article Aback.

Back the main-topsail! *brasse le grand hunier sur le mât!* Fr. the command to brace that sail in such a manner that the wind may exert its force against the fore-part of the sail, and by thus laying it aback materially retard the ship's course.

Back, or Dutchman's Cap, an islet of the Hebrides. Long. 6° 27′ W., lat. 56° 29′ N.

BACKAR, or Behkur, a district and town of Hindostan, in the province of Moultan. The town is situated on an island formed by the Indus, near its junction with the Dommoody; formerly it was called Munsoorah, and had a strong fort. Long. 70° 2′ E., lat. 28° 31′ N.

BACK BAR, the bar in a chimney, for suspending vessels over the fire.

BACK-BEAR, Back-berend, Backberond, in old law, a criminal caught carrying off something on his back. See Backcarry.

BACK'BITE, *v.*
Back'biter, *n. s.*
Back'bitingly, *adv.* } From back and bite. A familiar term for the calumny and calumniators which shun the presence of their victims. To censure the absent; the coward who defames in the dark.

> Use his men well Davy, for they are arrant knaves and will *backbite*. *Shakspeare.*
>
> Nobody is bound to look upon his *backbiter*, or his underminer, his betrayer, or his oppressor, as his friend. *South.*

BACK-BOARD, in maritime affairs, is of a semi-circular figure, placed transversely in the after-part of a boat, like the back of a chair, to recline against while sitting in the stern sheets.

BACK-BOND, in Scots law, a bond granted by him who receives a deed to declare the purpose of it, and to bind the granter to perform accordingly.

BACK'BONE, *n. s.* from back and bone. The bone of the back.

> The *backbone* should be divided into many
> for commodious bending, and not to be o
> rigid bone.

BACK'CARRY. Having on the bac

> Manhood in his forest laws, noteth it f
> the four circumstances or cases, wherein a
> may arrest an offender against vert or venis
> forest, viz. stable-stand, dog-draw, *backca*
> bloody hand.

BACK'DOOR, *n. s.* From back an
The door behind the house; privy passa

> The procession durst not return by the way
> but, after the devotion of the monks, passed
> *backdoor* of the convent.
>
> Popery, which is so far shut out as not to
> openly, is stealing in by the *backdoor* of athei
> *A*

BACKER, or Bakker (Jacob), a p
portraits and history, was born at Harli
1609, but spent the greatest part of hi
Amsterdam. He was remarkable for an
mon readiness of hand and freedom of
His incredible expedition appeared in a
of a lady from Haerlem, whom he painted
length, and began and finished in o
though he adorned the figure with rich
and several ornamental jewels. He also
historical subjects with success; and h
fine picture of Cimon and Iphigenia.
signing academy figures, his expression
just, and his outline so correct, that he o
the prize from all his competitors; and hi
are bought up at very high prices in th
Countries. The Carmelites church at A
has a capital picture of his of the Last Ju
He died in 1651.

Backer, or Bakker (Jacques, or Jam
a painter of history, was born at Antw
1530, and learned the principles of painti
his father, who was very knowing in his
sion, though his works were in no great
tion. After his death he lived with one P
a dealer in pictures, who avariciously to
to keep him incessantly employed, and s
paintings to Paris to be disposed of, wh
were exceedingly admired. The judicio
eager to purchase them; and though the
actor sold them at a great price, yet the ar
not proportionably rewarded, but contin
in the same depressed condition. His
indeed was universally allowed, but his
and the narrowness of his circumstances,
universally unknown. He had a clea
manner of penciling, and a tint of color t
extremely agreeable. He died in 1560.

BACKEREEL, or Bacquerelli (W
a painter of history, born at Antwerp, an
ciple of Rubens, at the same time with V
When each of them quitted that mas
commenced painters, Backereel was litt
rior to Vandyck, which may be seen in th
of the former, in the church of the A
monks at Antwerp. He had likewise a
poetry; but exercising that talent too f
writing satires against the Jesuits, they co
him to fly from Antwerp. Sandrart o
that in his time there were seven or eight
painters of this name in Italy and the Low
tries.

BACKERGUNGE, a district in the

Bengal, a considerable portion of
Bokla, situated near the sea-side,
, overwhelmed by the sea, and
recovered from the inundation:
are, however, very productive, but
o inundations, are very unhealthy.
settled here a number of the
the Portuguese, who, in the year
ited by the nuwab, Shaista Khan,
aja of Arracan, and enter into his
a town in the province of Bengal,
strict 120 miles east of Calcutta;
nce of the English magistrate, and
ry considerable trade in rice, salt,
oths. Long. 89° 20′ E., lat. 22°

AME Wheel, for laying cordage,
ad ratline, to a two-inch rope, is
ive feet in diameter, and is hung
uprights, fixed by tenons, on a
ported by a knee of wood. Over
ni-circular frame, called the head,
e whirls (that run on the brasses),
dles, secured by a hasp and pin.
ted by means of a leather band en-
hirls and wheel. Three of the
ned when hardening the strands,
when closing the rope, the strands
gether on it. The truck, on which
wheel is fixed, runs on four wheels,
three-inch oak plank, about nine
thirteen inches broad at one end,
hes broad at the other.

END, *n. s.* From back and friend.
wards; that is, an enemy in secret.

ess importunities of talebearers and
nst fair words and professions
L'Estrange.
urch from encroaching upon the civil
who are *backfriends* to both would
nuate. *South.*

MON, *n. s.* From *bach gammon*,
battle; a play or game at tables,
dice.

ing your old foe the hangman,
o lurch you at *backgammon*. *Hudibras.*
em are you with the vicar of the pa-
lay with him at *backgammon?* *Swift.*

on, a game played with dice
be learned only by observation
It is said to have been invented
he period preceding the Conquest.
es *Wallicus, a voc. Tawlbwrdd*, cited
l. iv. p. 404. 8vo.
is played with dice, upon a table,
s. The table is divided into two
which there are twenty-four black
ces, called points. Each adversary
n, black and white, to distinguish
ey are disposed of in the following
posing the game to be played into
table, two are placed upon the
the adversary's table, five upon
in the opposite table, three upon
oint in the hithermost table, and
six point in the right-hand table.
ject in this game is for each player
to bring the men round into his right hand table, by throwing with a pair of dice those throws that contribute towards it, and at the same time prevent the adversary doing the like. The first best throw upon the dice is esteemed aces, because it stops the six point in the outer table, and secures the cinque in the thrower's table; whereby the adversary's two men upon the thrower's ace point cannot get out with either quatre, cinque, or six. This throw is an advantage often given to the antagonist by the superior player. When he carries his men home in order to lose no point, he is to carry the most distant man to his adversary's bar point, that being the first stage he is to place it on; the next stage is six points farther, viz. in the place where the adversary's five men are first placed out of his tables. He must go on in this method till all his men are brought home, except two, when by losing a point, he may often save the gammon, by throwing two fours or two fives. When a hit is only played for, he should endeavour to gain either his own or adversary's cinque point: and if that fails by his being hit by the adversary, and he finds him forwarder than himself, in that case he must throw more men into the adversary's tables; which is done in this manner: he must put a man upon his cinque or bar point; and if the adversary fails to hit it, he may then gain a forward game instead of a back game; but if the adversary hits him, he should play for a back game: and then the greater number of men which are taken up makes his game the better, because by these means he will preserve his game at home: and then he should endeavour to gain both his adversary's ace and trois points, or his ace and deuce points, and take care to keep three men upon the adversary's ace point, that in case he hits him from thence, that point may remain still secure to himself. A back game should not be played for at the beginning of a set, because it would be a great disadvantage, the player running the risk of a gammon to win a single hit.

A variety of instructions with regard to this curious game, are given by Mr. Hoyle, who calculates the odds of the game with great accuracy. The following particulars, however, may be of use to the generality of players. If a player has taken up two of the adversary's men, and happens to have two, three, or more points made in his own tables, he should spread his men, that he may either take a new point in his tables, or be ready to hit the man which the adversary may happen to enter. If he finds, upon the adversary's entering, that the game is upon a par, or that the advantage is on his own side, he should take the adversary's man up whenever he can, it being twenty-five to eleven that he is not hit: except when he is playing for a single hit only; then if playing the throw otherwise gives him a better chance for it, he ought to do it. As it is five to one against his being hit with double dice, he should never be deterred from taking up any one man of the adversary's. If he has taken up one of the adversary's men, and should happen to have five points in his own tables, and forced to leave a blot out of his tables, he should endeavour to leave it upon doublets preferable to any other chance; because the odds re thirty-five to one, that he is not hit; whereas t is only seventeen to one but he is hit upon any other chance. When the adversary is very forward, a player should never move a man from his own quatre, trois, or deuce points, thinking to bear that man from the point where he put it, as nothing but high doublets can give him any chance for the hit. Instead of playing an ace or a deuce from any of those points, he should play them from his own size or highest points, so that throwing two fives, or two fours, his size and cinque points being eased, would be a considerable advantage to him; whereas, had they been loaded, he must have been obliged to play otherwise. It is the interest of the adversary to take up the player as soon as he enters. The blot should be left upon the adversary's lowest point; that is to say, upon his deuce point rather than upon his trois point; or upon his trois point rather than upon his quatre point; or upon his quatre point preferable to his cinque point, for a reason before mentioned: all the men the adversary plays upon his trois, or his deuce points, are deemed lost, being greatly out of play; so that those men not having it in their power to make his cinque point, and his game being crowded in one place and open in another, the adversary must be greatly annoyed by the player. If the player has two of the adversary's men in his tables, he has a better chance for a hit than if he had more, provided his game is forwarder than that of his antagonist; for if he had three or more of the adversary's men in his tables, he would stand a worse chance to be hit. When a player is running to save the gammon, if he should have two men upon his ace point, and several men abroad, although he should lose one point or two in putting his men into his tables, it is his interest to leave a man upon the adversary's ace point, because it will prevent his adversary from bearing his men to the greatest advantage, and at the same time the player will have a chance of the adversary's making a blot, which he may chance to hit. However, if a player finds, upon a throw, that he has a probability of saving his gammon, he should never wait for a blot, as the odds are greatly against his hitting it, but should embrace that opportunity.

The following are directions for calculating the odds of saving or winning the gammon. Suppose the adversary has so many men abroad as requires three throws to put them into his tables, and at the same time that the player's tables are made up, and that he has taken up one of the adversary's men; in this case it is about an equal wager that the adversary is gammoned. For, in all probability, the player has borne two men before he opens his tables, and when he bears the third man, he will be obliged to open his size or cinque point. It is then probable that the adversary is obliged to throw twice before he enters his men in the player's tables, twice more before he puts that man into his own tables, and three throws more to put the men which are abroad into his own tables, in all seven throws. Now the player having twelve
men to bear, he may be forced to make an
or a deuce twice before he can bear all his m
and consequently will require seven throws
bearing them; so that, upon the whole, it
about equal whether the adversary is gammon
or not. Suppose a player has three men up
his adversary's ace point, and five points in
own tables, and that the adversary has all
men in his tables, three upon each of his f
highest points. Has the player a probability
gammoning his adversary or not?

Poi

For bearing three men from his 6th point is 1
From his 5th point 1
From his 4th point 1
From his 3rd point . . . .
From his 2nd point . . . .

In all

Bringing his three men from the adversary's ace point to his size point in his own tables, being eighteen points each, and making together

There must remain

It is plain from this calculation, that the pl
has much the best of the probability of the g
mon, exclusive of one or more blots which
adversary is liable to make in bearing his m
supposing at the same time the throws to
upon an equality. Suppose two blots are
either of which cannot be hit but by double d
one must be hit by throwing eight and the o
by throwing nine; so that the adversary
only one die to hit either of them. What
the odds of hitting either of them? The cha
of two dice being in all

The chance to hit 6, are 6 and 2 twice
5 and 3 twice . . . .
2 Deuces . . . .
2 Fours . . . .
The chances to hit 9 are 6 and 3 twice .
5 and 4 twice . . . .
2 Trois . . . .

For hitting in all . . . .
Chances for not hitting, remain . . .
So that the odds are twenty-five to el
against hitting either of these blots.

This method may be taken to find out
odds of hitting three, four, or five blots
double dice; or blots made upon double
single dice at the same time. After kno
how many chances there are to hit any of
blots, they must be added altogether, and
subtracted from the number thirty-six, whic
the chances of the two dices, and the questi
solved.

The laws of Backgammon are, 1. If a
is taken from any point, it must be playe
two men are taken from it, they also mu
played. 2. A man is not supposed to be pl
till it is placed upon a point and quitted.
a player has only fourteen men in play, th
no penalty inflicted, because by his pl
with a less number than he is entitled
plays to a disadvantage, for want of the def
man to make up his tables. 4. If he bear

men before he has entered a man
nd which of course he was obliged
ch men so borne must be entered
e adversary's tables as well as the
up. 5. If he has mistaken his throw
it, and his adversary has thrown, it
e choice of either of the players to
ss they both agree so to do.
able method of prolonging a hit at
n, affords a case of instruction, as
iosity; for there is a probability of
hit last by one of the players for
s, although they shall both play as
l. Suppose B to have borne thirteen
that A has his fifteen men in B's
three men upon his size point, as
his cinque, quatre, and trois points,
his deuce point, and one upon his
A in this situation can prolong it
his fifteen men home, always se-
lose points till B has entered his two
rought them upon any certain point;
B has gained that point, A will open
uce, or trois point, or all of them;
e, B hits one of them, and A, taking
e two or three men in B's tables, is
t that man; and also he being certain
p the other man, has it in his power
the hit almost to any length, provided
are not to open such points as two
fives, or two sixes, but always to
e, deuce, or trois points, for B to hit

the following two critical cases for a
: 1. Suppose the fore game to be
A, and that all his men are placed as
as fourteen of his men placed upon
ry's ace point, and one man upon his
deuce point, and B is to throw;
e best of the hit? Answer: A has
it, gold to silver: because, if B does
an ace to take his adversary's deuce
h is twenty-five to eleven against him,
e up B's men in his tables, either
make points; and then if B secures
deuce or trois point, A will put as
down as possible, in order to hit, and
a back game. It is evident that the
is very powerful; consequently, who-
es it must become a greater proficient
e than he could by any other means.
A to have five men placed upon his
as many upon his quatre point, and
mber upon his deuce point, all in his
. At the same time let us suppose B
ee men placed upon A's ace point, as
A's trois point, and the same number
cinque point, in his own tables, and
placed as usual out of his tables;
e best of the hit? Answer: The game
l B has gained his cinque and quatre
s own tables; which, if he can effect,
ying two men from A's cinque point,
force his adversary to blot by throw-
, which, should B hit, he will have the
hit.

HEAVER, a machine long used in
ts of England, particularly in Hamp-
shire, and Sussex, for winnowing corn.
An improved construction of this machine was proposed by Dr. Hales in 1747, which not only rendered it fit for winnowing corn sooner and better than by any other means previously used, but also for clearing it of the very small corn, seeds, smut-balls, &c. It has however been since improved.

BACK'HOUSE, *n. s.* From back and house. The buildings behind the chief part of the house.

> Their *backhouses*, of more necessary than cleanly service, as kitchens, stables, are climbed up unto by steps. *Carew.*

BACKHUYSEN (Ludolph), an eminent painter, born at Embden, in 1631, who received his earliest instruction from Albert Van Everdingen; but acquired his principal knowledge by frequenting the painting rooms of different masters. One of these was Henry Dubbels, whose skill in his art was great; and he was equally communicative of his knowledge to others. From him Backhuysen obtained more benefit than from all the painters of his time. His subjects were sea-pieces, ships, and sea-ports. He had not practised long when he became the object of general admiration; so that his drawings were sought after, and several of them were bought up at 100 florins. He studied nature attentively in all her forms; in gales, calms, storms, clouds, rocks, skies, lights, and shadows; and expressed every subject with so sweet a pencil, and such transparence and lustre, as placed him above all the artists of his time, except the younger Vandervelde. It was a frequent custom with Backhuysen, whenever he could procure resolute mariners, to go to sea in a storm, to store his mind with images directly copied from nature; and the moment he landed, impatiently to run to his pallette to delineate those incidents of which the traces might, by delay, be obliterated. He perfectly understood the management of the Chiaro-scuro, and, by his skill in that part of his art, gave uncommon force and beauty to his objects. His works may easily be distinguished by the freedom and neatness of his touch, the clearness and natural agitation or quiescence of the water, a peculiar tint in his clouds and skies, and the exact proportions of his ships. He painted, for the Burgomasters of Amsterdam, a large view of the city, for which they gave him 1300 guilders, and afterwards presented it to the king of France. No painter was ever more honored by the visits of kings and princes than Backhuysen; the king of Prussia was one of the number; and Peter the Great often endeavoured to draw after vessels which he had designed. He died in 1709.

BACKING. See HORSEMANSHIP.

BACKING WARRANTS, in law, denotes the signing of such as have been issued by a justice of the peace in one county, by a justice of the peace in another, which is necessary before they can be executed there. This practice is authorised by statutes 23 Geo. II. c. 26. and 24 Geo. II. c. 55.

BACKNANG, a town in the kingdom of Wirtemberg, circle of Heilbronn, and district of the Lower Neckar. It lies on the Murr, and contains 3020 inhabitants, many of whom are woollen-weavers and tanners. Eight miles east of Marbah, and twelve north-east of Stutgard.

BACK-PAINTING, the method of painting mezzotinto prints, pasted on glass, with oil-colors. See MEZZOTINTO. It consists chiefly in laying the print upon a piece of crown-glass, of such a size as fits it. To do this, the print should be laid in clean water for two days and nights, if the print be on very strong, close, and hard gummed paper; but if upon an open, soft, spungy paper, two hours, or more, will sometimes suffice. The paper or picture having been sufficiently soaked, take it out and lay it upon two sheets of paper, and cover it with two more; and let it lie there a little to draw out the moisture. In the mean time, take the glass the picture is to be put upon, and set it near the fire to warm; take Strasburg turpentine, warm it over the fire till it is grown fluid, then, with a hog's-hair brush, spread the turpentine very smoothly and evenly on the glass. Then take the mezzotinto print from between the papers, and lay it upon the glass; beginning first at one end, rubbing it down gently till it lie close, and there be no wind bladders between. After this rub or roll off the paper from the back of the print, till it looks black, i. e. till nothing appears but the print, like a thin film left upon the glass, and set it aside to dry. Then varnish it over with some white transparent varnish, that the print may be seen through it; and it is then fit for painting. The utmost care is necessary in rubbing or rolling the paper off the print so as not to tear it, especially in the light parts. Or the prints, instead of being soaked, may be rolled up and boiled for about two hours, more or less, according to the quality of the paper; and that will render it as fit for rubbing, rolling or peeling, as the other method. This being done, and the oil-colors prepared, ground very fine, and tempered up very stiff, lay on the back of the transparent prints such colors as each part requires; letting the master-lines of the print still guide the pencil; and thus each particular color will lie fair to the eye on the other side of the glass, and almost as well as a painted piece, if it be done neatly. The shadows of the print are generally sufficient for the shadow of every color; but if it is wished to give a shadow by the pencil, let the shadows be laid on first, and the other colors afterwards. In this kind of back-painting it is not necessary to lay on the colors very smooth. As the chief aim is to have the colors appear well on the foreside of the print, all that is necessary is to lay the colors on thick enough, that its body may strike the color of it plainly through the glass.

BACK'PIECE, *n. s.* From back and piece. The piece of armour which covers the back.

The morning that he was to join battle, his armourer put on his *backpiece* before, and his breastplate behind *Camden.*

BACK-QUADRANT, the same with BACK-STAFF. See QUADRANT.

BACK RIVER, a river of Maryland, which runs into the Chesapeake.

BACK'ROOM, *n. s.* From back and room. A room behind; not in the front.

If you have a fair prospect backwards of gardens, it may be convenient to make *backrooms* the larger. *Mox. Mech. Exercises.*

BACKS, among dealers in leather,
thickest and best tanned hides, used
soles of shoes.

BACK'SIDE, *n. s.* From back
The hinder part of any thing; the hi
an animal; the yard or ground behin

If the quicksilver were rubbed from th
the speculum, the glass would cause the
of colours, but more faint; the phænom
not upon the quicksilver, unless so far as
the reflection of the *backside* of the glass.

A poor ant carries a grain of corn, cli
wall with her head downwards and her
wards.

The wash of pastures, fields, comm
streets, or *backsides*, are of great advar
sorts of land.

BACK-SINEWS OF A HORSE, th
tendons of the foot, placed behind th
and very frequently injured by ove
The inflammation hereby produced
moved in the first instance by em
astringent cataplasms.

BACK'SLIDE, *v. n.* } From back
BACK'SLIDER, *n. s.* } To retrogra
BACK'SLIDING. } gion. Exc
scriptural and theological term.
signification, as employed by divines,
tacy as stated by Dr. Johnson, but
to it. It supposes a religious prof
vanced to a state of spirituality and c
and a receding from that state in a
less degree in principle or practice:
not amount to a total abandonment o

The *backslider* in his heart shall be fil
own ways.

Thy *backsliding* shall reprove thee.

Remember thy *backslidings* from me;
them: confess them before me; and loo
enable thee to take thy steps with more fi
to offer up thy prayers with more spiritua

BACK'STAFF, *n. s.* From back
because in taking an observation, th
back is turned toward the sun. An
useful in taking the sun's altitude
was sometimes called Davis's quadra
inventor, captain John Davis, a Wel
a celebrated navigator, who produc
the year 1590.

This instrument consists of two
arches of box-wood, and three vanes:
the longer radius is of 30°, and th
making between them 90°, or a qua
the vane at the centre is called the ho
that on the arch of 60° the shade-van
on the other arch the sight-vane. It
sary to give a more minute descrip
more complete and accurate instru
entirely superseded the use of this.

BACK'STAIRS, *n. s.* From back
The private stairs in the house.

I condemn the practice which hath late
the court at the *backstairs*, that some
sheriffs get out of the bill.

BACK'STAYS, *n. s.* From back
Ropes or stays which keep the masts
from pitching forward or overboard.

The BACKSTAYS, Fr. *galhaubans*
ropes extending from the top-mas
the starboard and larboard sides of
where they are farther extended to th

they are used to second the efforts of the shrouds, in supporting the masts, when strained by a weight of sail in a fresh wind.

They are usually distinguished into breast-backstays and after-backstays; the intent of the first being to sustain the mast when the ship sails upon a wind; or, in other terms, when the wind acts upon the ship sideways; the second is to enable her to carry sail when the wind is further aft; and the third kind take their name from being shifted or changed from one side to the other, as occasion requires. There are also backstays for the top-gallant-masts, in large ships, which are fixed in the same manner with those of the top-masts.

A pair of backstays is usually formed of one rope, which is doubled in the middle, and fastened there so as to form an eye, which passes over the mast-head, from whence the two ends hang down, and are stretched to the channels, by dead-eyes and lanyards. See the article DEAD-EYES, &c.

BACKSTAY STOOL, a short piece of plank, fitted for the security of the dead-eyes, and chains for the backstays, though sometimes the channels are left long enough at the after end, for the backstays to be fitted thereto.

BA'CKSWORD, *n. s.* From back and sword. A sword with one sharp edge.

Ball dreaded not old Lewis at *backsword*.
Arbuthnot.

BACK TACK, in Scots law, a lease granted by a mortgager or heritable creditor, who, instead of possessing the mortgage lands, grants a rent thereof to the reverser or heritable debtor, for payment of a certain sum in name of tack duty.

BACK'WARD, *n. s. adv.* & *adj.*
BACK'WARDS,
BACK'WARDLY, *adv.*
BACK'WARDNESS, *n. s.*
From back, and ƿeaꞃꝺ, Sax. that is, towards the back; contrary to forward. Backward, as an adverb, denotes simply the manner of going; and is distinguished from back, thus: a person stands back who does not wish to be in the way; he goes backward when he does not wish to turn his back on an object. As an adjective, its meaning is unwilling, or averse. And hence it is often used in the sense of hesitating, dilatory. Slow in apprehension, and in growth. The substantives take their literal and figurative meaning from the adverb and the adjective.

They went *backward*, and their faces were *backward*. *Genesis.*

All things are ready, if our minds be so:
Perish the man whose mind is *backward* now.
Shakspeare.

It should seem then, that Dobbin's tail grows *backward*. *Id.*

What seest thou else
In the dark *backward* or abysm of time? *Id.*

The monstrous sight
Struck them with horror *backward*; but far worse
Urg'd them behind. *Milton.*

Then darting fire from her malignant eyes,
She cast him *backward* as he strove to rise.
Dryden.

We are strangely *backward* to lay hold of this safe, this only method of cure. *Atterbury.*

The thing by which we are apt to excuse our *backwardness* to good works, is the ill-success that hath been observed to attend well-designing charities. *Id.*

Cities laid waste, they storm'd the dens and caves
For wiser brutes are *backward* to be slaves. *Pope.*

Our mutability makes the friends of our nation *backward* to engage with us in alliances. *Addison.*

It often falls out that the *backward* learner makes amends another way. *South.*

To prove the possibility of a thing, there is no argument to that which looks *backwards*; for what has been done or suffered may certainly be done or suffered again. *Id.*

Like Numid lions by the hunters chas'd,
Though they do fly, yet *backwardly* do go
With proud aspect, disdaining greater haste.
Sidney.

The mind is *backward* to undergo the fatigue of weighing every argument. *Watts.*

BACK-WORM. See FILANDERS.

BACO, a town of Mindoro, one of the Philippines, the capital of the island, and residence of a Spanish judge. The environs are well watered by springs from the mountains, which are covered by sarsaparilla. Long. 121° 5′ E., lat. 13° 18′ N.

BACO, in old Latin, a fat hog.

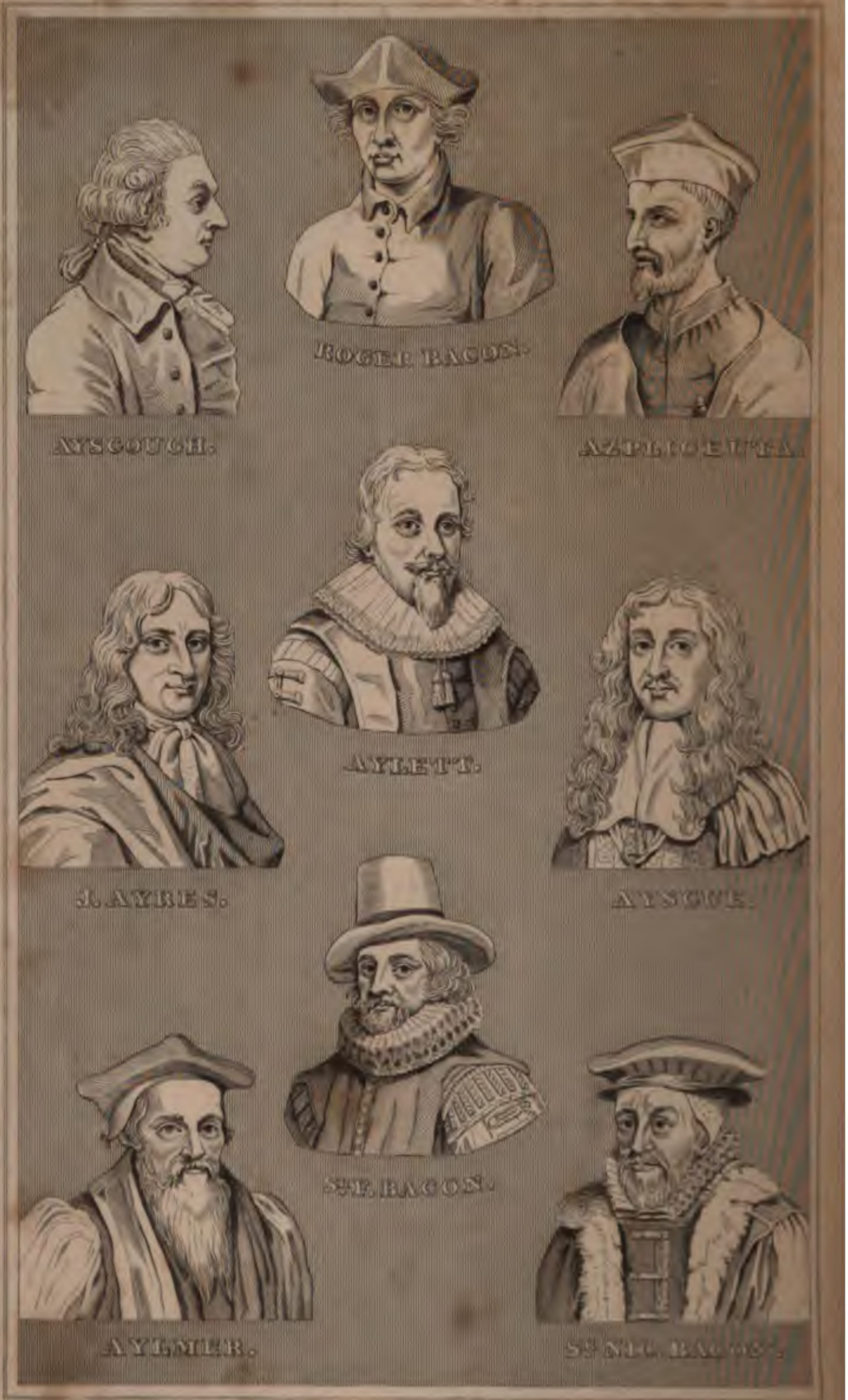
BACOBA, in botany, a name by which some authors call the banana tree, or musa fructu breviori.

BACON (Anthony), the son of Sir Nicolas, and elder brother to the celebrated lord chancellor, was born in 1558, and educated at Cambridge. He spent much of his time in travelling, and thus became personally acquainted with most of the literati of his age. In 1579, at the age of twenty-one, he went to Paris, where he resided for some time; and thence to Bourges and Geneva, where he lodged at the house of the celebrated Theodore Beza. From Geneva he successively removed to Montpelier, Marseilles, Bourdeaux, and Montauban, sometimes communicating intelligence of importance to England. In 1585 he visited Henry, king of Navarre, afterwards the great Henry IV. of France, who was then at Bearn; and became acquainted with the learned Lambert Danæus, who, as a mark of esteem, dedicated several of his works to him. His health failing, he returned to England in February, 1591-2; and in 1595 took up his residence at Essex house, where he carried on a most extensive correspondence with the foreign literati, and among others with king Henry IV. The time and place of his death is uncertain.

BACON (Francis), lord high chancellor of England, under king James I. was son of Sir Nicholas Bacon, by Anne, daughter of Sir Anthony Cook, eminent for her skill in Latin and Greek. He was born in 1650; and showed such marks of genius that he was taken notice of by Queen Elizabeth when very young. He was educated at Trinity college, Cambridge; and made such progress in his studies, that, before he was sixteen, he had not only traversed the whole circle of the liberal arts as then taught, but began to perceive those imperfections in the reigning philosophy which he afterwards so effectually exposed. On his leaving the university his father sent him to France; where, before he was nineteen years of age, he wrote a general view of the state of Europe: but Sir Nicholas dying, he was obliged suddenly to return to England, when he applied himself to the study of the common law, at Gray's-Inn. At this period the famous Earl of Essex, who could distinguish merit, entered into intimate friendship with him; zealously attempted, though without success, to procure him the office of queen's solicitor; and, in order to comfort his friend under the disappointment, conferred on him a present of land to the value of £1800. Bacon, notwithstanding the Earl's friendship, and even the early prepossession of her majesty in his favor, met with many obstacles to his preferment during her reign. His enemies represented him as a speculative man, whose head was filled with philosophical notions, and therefore more likely to perplex than forward public business. It was with great difficulty that lord treasurer Burleigh obtained for him the reversion of register to the star chamber, worth about £1600 a-year, which only fell to him about twenty years after. He did not obtain any other preferments from queen Elizabeth; though, if obedience to a sovereign in the most disagreeable of all offices, viz. the casting reflections on a deceased friend, entitled him, he might have claimed it. The people were so clamorous, even against the queen herself, on the death of Essex, that it was thought necessary to vindicate the conduct of the administration; and to Bacon was assigned this disgraceful task. Upon the accession of James he was soon raised to considerable honors; and wrote in favor of the union of the two kingdoms of Scotland and England. In 1616 he was sworn of the privy council. He then applied himself to the reducing and recomposing the laws of England. When attorney-general, he distinguished himself by his endeavours to restrain duelling, then very frequent. In 1617 he was appointed lord keeper of the great seal; and, in 1618, lord chancellor of England, and created Lord Verulam. In the midst of these honors, and the multiplicity of business, he forgot not his philosophy, but in 1620 published his great work Novum Organum. In 1621 he was advanced to the dignity of Viscount St. Albans, and appeared with great splendor at the opening of the session of parliament; but soon after met with a severe reverse of fortune. For about the twelfth of March, a committee of the house of commons being appointed to inspect the abuses of courts of justice, the chancellor was openly accused of corruption, and the king is said to have positively enjoined him to submit to his peers, promising to reward him afterwards! The chancellor, though he foresaw his approaching ruin if he did not plead for himself, resolved to obey; and the house of peers, on the 3d of May, 1621, gave judgment against him, 'that he should be fined £40,000, and remain prisoner in the tower during the king's pleasure; should for ever be incapable of any office, place, or employment in the state, and that he should never sit in parliament, or come within the verge of the court.' The fault which, next to his ingratitude to Essex, thus tarnished the glory of this illustrious man, is said to have principally proceeded from his indulgence to his servants, who made a corrupt use of it. One day, during his trial, passing through a room where several of his domestics were sitting, upon their rising up to salute him, he said, 'Sit down, my masters; your rise hath been my fall.' And we are told by Rushworth, in his historical collections, 'that he treasured up nothing for himself or family, but was over-indulgent to his servants, and connived at their takings: they were profuse and expensive, and had at their command whatever he was master of. The gifts taken were for the most part for interlocutory orders. His decrees being generally made with so much equity, that though gifts rendered him suspected of injustice, yet never any decree made by him was reversed as unjust.' It was peculiar to this great man (say the authors of the Biog. Brit.) to have nothing narrow and selfish in his composition: he gave away without concern whatever he possessed; and believing other men of the same mould, he received with as little consideration. He retired, after a short imprisonment, from the engagements of an active life, to the shade of a contemplative one, which he had always loved. The king remitted his fine, and he was summoned to parliament in the first year of King Charles I. In his recess he composed the greatest part of his English and Latin works, and it appears from them that his thoughts were still free, vigorous, and noble. The last three years of his life he devoted wholly to his studies. He died in 1626; and was buried in St. Michael's church at St. Albans, where a monument of white marble was erected to him by Sir Thomas Meautys', formerly his secretary. A complete edition of his works was published at London in 1740. Addison has said of him, that he had the sound, distinct, comprehensive, knowledge of Aristotle, with all the beautiful light graces and embellishments of Cicero. Mr. Walpole calls him the prophet of arts, which Newton was afterwards to reveal; and adds, that his genius and his works will be universally admired as long as science exists. We must add, from another writer, with regret, 'as long as ingratitude and adulation are despicable, so long shall we lament the depravity of this great man's heart. Alas! that he, who could command immortal fame, should have stooped to the little ambition of power.'

> If parts allure thee, think how Bacon shin'd;
> The wisest, brightest, meanest of mankind. *Pope.*

Bacon (Robert), a divine of the thirteenth century, was born about 1168. He studied at Oxford, where he distinguished himself by the quickness of his parts. Thence, according to the custom of that age, he removed to Paris, where he perfected himself in all the branches of learning. After his return he settled at Oxford, and read divinity lectures. In 1233 he was made treasurer of the cathedral church of Salisbury; and distinguished himself by a sermon before king Henry III. at Oxford. In 1240 he lost his great patron and intimate friend, Edmund, archbishop of Canterbury, and possibly this circumstance, joined to his love of a retired life, might induce Bacon, though very old, to enter into the order of Friars Preachers. In gratitude to the archbishop, Bacon wrote his life, which was



London Published by Thomas Tegg Cheapside.

eemed. He wrote also many other
eces, and died in 1248.

Roger), a Franciscan friar of surprising
learning; born near Ilchester in Somer-
1214. He studied first at Oxford, and
at Paris, which, in those times, was
the centre of literature. Here he made
progress in the sciences, that he was
he glory of that university, and much
y several of his countrymen, particu-
ert Grouthead, afterwards bishop of
is friend and patron. About 1240
d to Oxford, and, assuming the Fran-
oit, prosecuted experimental philoso-
unremitting ardor. In this pursuit,
ents, instruments, and in scarce books,
, he spent, in the space of twenty years,
an £2000, which was given him by
e heads of the university. But such
ary talents, and his astonishing progress
s, which, in that ignorant age, were
known to the rest of mankind, whilst
l the admiration of the more intelligent
d not fail to excite the envy and
his illiterate fraternity; who found no
in propagating the notion of Bacon's
ith the devil. Under this pretence, he
ined from reading lectures; his writings
ined to his convent; and, in 1278, he
as imprisoned in his cell. At this time
ixty-four years of age. Nevertheless,
mitted the use of his books, he went on
ional pursuit of knowledge, corrected
r labors, and wrote several curious
When he had been ten years in con-
Jerome de Ascoli being elected pope,
licited his holiness to be released; and
he end of that pope's reign, obtained
. He spent the remainder of his life
llege of his order, where he died in
the eightieth year of his age, and was
the Franciscan church. Such are the
culars, which the most diligent re-
have been able to discover concerning
great man; who, like a single bright
dark hemisphere, shone forth in an age
nce and superstition, the light and glory
intry. His works are: 1. Epistola fra-
n Baconis, de Secretis Operibus Artis et
et de Nullitate Magiæ. Paris, 1542, 4to.
93, 8vo. 2. Opus Majus. Lond. 1733,
shed by Dr. Jebb. 3. Thesaurus Che-
rancf. 1603, 1620. This was probably
r's title; but it contains several of our
treatises on this subject. There are
emain in different libraries several ma-
of his not yet published.

(Sir Nathaniel), K. B. and an excellent
was a younger son of Sir Nicholas, and
er to the great Francis Bacon. He
painting in Italy; but his manner and
approaches nearer to the style of the
school. Mr. Walpole observes, that
rd, where he lived, are preserved
his works; and at Gorhambury, his
eat. is a large picture by him in oil,
k-maid with a dead fowl, admirably
In the same house is a whole length
by himself, drawn on paper, his sword and pallet hung up, and a half length of his mother by him.

Bacon (Sir Nicholas), lord keeper of the great seal in the reign of Queen Elizabeth, was born at Chislehurst in Kent, 1510, and educated at Cambridge; after which he travelled into France, and visited Paris. On his return, he settled in Gray's Inn, and quickly distinguished himself so much, that on the dissolution of the monastery of St. Edmund's Bury, in Suffolk, he had a grant from king Henry VIII. of several manors. Two years after he was made attorney in the court of Wards, a place both of honor and profit. In this office he was continued by Edward VI. and in 1552 he was elected treasurer of Gray's Inn. His great moderation and consummate prudence preserved him through the dangerous reign of queen Mary. In the very dawn of that of Elizabeth he was knighted; and in 1558, the great seal of England being taken from archbishop Heath, was delivered to him with the title of lord keeper, and he was made one of the queen's privy council. He had a considerable share in the settling of religion: as a statesman he was remarkable for a clear head and deep counsels: but his great parts and high preferment were far from raising him in his own opinion, as appears from the modest answer he gave queen Elizabeth, when she told him his house at Red-grave was too little for him: 'Not so, madam,' returned he, 'your majesty has made me too great for my house.' After having held the great seal more than twenty years, this able statesman and faithful counsellor met with his death by falling asleep in his room with a window open, and the current of fresh air blowing in upon him. He awoke very ill, and was immediately removed into his bed-chamber, where he died in a few days, i. e. on the 26th of February, 1578-9. He was buried in St. Paul's, where a monument was erected to him, which was destroyed by the fire in 1666. Sir Nicholas was the first lord keeper that ranked as lord chancellor. He was twice married; by his first wife he had three sons and three daughters; and by his second, two sons, Anthony and Francis. Sir Nicholas left several manuscripts, which have never been printed.

Bacon (John), an ingenious sculptor, born in Southwark in 1740. He very early manifested an inclination for drawing, which was encouraged by binding him as an apprentice to a manufacturer of china, at Lambeth, when about fifteen years of age. Here a considerable part of his employment was to paint on porcelain, in which he improved himself so much, in forming small ornamental pieces, that within two years all the models of the manufactory were committed to him. This situation also afforded him an opportunity of seeing various models executed by other artists, which were sent to a neighbouring pottery to be burnt. In 1758 he obtained a premium from the society for the encouragement of the arts, for a small figure of Peace, after the manner of the antique; and eight different premiums afterwards for other figures. Before his apprenticeship was out, he formed a design of making statues in artificial stone, which he afterwards perfected, and which is still carried on in a manufactory in the New Road, with success. He first began to work in marble about 1763, and soon invented an instrument for transferring the form of the model to the marble (getting out the points as artists call it), which other sculptors have since adopted. In 1769 he received the first gold medal bestowed by the Royal Society, and next year was chosen an associate. The exhibition of his statue of Mars greatly increased his reputation; and Dr. Markham, since archbishop of York, employed him to make a bust of the king, to be placed in the hall of Christ Church College, Oxford. While he was modelling this bust, his majesty asked him 'if he had ever been out of the kingdom;' and receiving an answer in the negative, said, 'I am glad of it, you will be the greater honor to it.' By the execution of this work he obtained the royal patronage, and was employed to form another for the University of Gottingen. In 1777 he was engaged in preparing a model of a monument, to be erected in Guy's hospital to the memory of the founder, which he executed in such a manner, as recommended him to that of Lord Chatham, at Guildhall. In 1778 he became a royal academician, and finished a handsome monument to the memory of Mrs. Draper, which is in Bristol cathedral. From this period, his works are so numerous, that we can only mention a few of the principal:—Two groups for the top of Somerset-house; a statue of Judge Blackstone, for All Soul's College, Oxford; another of Henry VI. for Eton College; Lord Chatham's monument in Westminster Abbey; and Dr. Johnson's and Mr. Howard's in St. Paul's cathedral. He died of an inflammation in his bowels, in 1799, and left a widow and eight children. He was a man of most excellent character, and of his religious principles, let the inscription which he ordered to be placed over his grave testify: 'What I was as an artist, seemed to me of some importance while I lived; but what I really was, as a believer in Christ Jesus is the only thing of importance to me now.' Mr. Bacon also possessed respectable literary talents.

BA'CON, *n. s.* probably from baken, that is, dried flesh. The flesh of a hog salted and dried.

No wine ne drank she, neyther white ne red,
Hire bord was served most with white and black
Milk, and brown bred, in which she fond no lack,
Seinde *bacon*, and sometime an ey or twey;
For she was as it were a manner dey! *Chaucer.*

When it had stabbed or broke a head,
It would scrape trenchers or chip bread;
Toast cheese or *bacon*, tho' it were
To bait a mouse-trap it would not care.
Hudibras.

High o'er the hearth a chine of *bacon* hung,
Good old Philemon seized it with a prong,
Then cut a slice. *Dryden.*

BACON, the flesh of swine, salted, dried, and generally, in this country, smoked. It is a considerable article of commerce: we shall describe the most approved methods of preserving it; viz. that adopted in Somersetshire. The last three months of the year are selected as best adapted for curing bacon here. When a hog is killed for bacon, the sides are laid in large wooden troughs, and sprinkled all over with bay salt; thus they are left for twenty-four hours, to drain away the blood and the superfluous juices. After this first preparation, they should be taken out, wiped very dry, and the drainings thrown away. Next some fresh bay-salt, well heated in a large iron frying-pan, is to be rubbed over the meat, until it has absorbed a sufficient quantity, and this friction repeated four successive days, while the meat is turned only every other day. If large hogs are killed, the flitches should be kept in brine for three weeks, and, during that period, turned ten times, then taken out, and thoroughly dried in the usual manner; for, unless they be thus managed, it is impossible to preserve them in a sweet state, nor will their flavor be equal to those properly cured.

As the preservation of the salt used in this process, when carried on to a great extent, may be an object of economy, the following method may be adopted for recovering the saline matter contained in these drainings, or in any other brine; it was communicated by a person who had seen it practised on the continent, where culinary salt is sold at a considerable price. He first added such a quantity of boiling-water, to the brine or drainings, as was sufficient to dissolve all the particles of the salt. This solution he then placed in either an iron or earthen vessel, over a fire, which, by boiling, forced all the feculent animal particles to the top, so that they were carefully removed by a perforated ladle. After the liquid had become clear, it was set aside for twenty-four hours, in a cool place, that the coloring matter might subside. But, as the combination it had formed with the boiled liquor was very tenacious, he contrived two different ways of separating it: 1. A solution of alum in water, one pint to an ounce of that substance was gradually dropt into the cold liquor, in the proportion of a table-spoonful of the former to every gallon of the latter; and the whole allowed to stand for several hours; or, 2. If time and circumstances would permit, he filtered the liquor by means of long flannel slips, cut longitudinally by the web, but previously soaked in another strong and perfectly clear solution of salt; these slips were so immersed into the colored fluid that the projecting external end reached another vessel, which had been placed much lower than that containing the brine, or drainings. When these particulars were properly attended to, the absorbed liquor became almost colorless, and pellucid. Having thus procured a clear liquid solution, nothing more was required than to evaporate it to dryness, in order to reproduce the salt in its original granulated form. This process may be imitated without any difficulty, and at very little expense. Dr. Willich, from whose Domestic Encyclopædia we now quote, says, the second method of discharging the color is preferable; as by this no alum will be required, which only contaminates the salt.

BACON, THE SERVICE OF THE, a custom, mentioned by our old historians and law-writers; as well as in the Spectator, as held in the manor of Whichenacre in Staffordshire, and in the priory of Dunnow in Essex. In the former of these places, by an ancient grant of the lord, a flitch of bacon, with half a quarter of wheat, was to be given to every married couple who could swear that having been married a year and a day, they

ever within that time have once ex-
their mate for any other person on
wever richer, fairer, or the like. But
e to bring two of their neighbours with
attest that they swore the truth. On this
of another neighbouring manor of Rud-
to find a horse, saddled, and a sack to
bounty in, with drums and trumpets,
a day's journey out of the manor; all
nts being summoned to attend, and pay
the bacon. The bacon of Dunmow,
ted under Henry III. was on much the
ting; but the tenor of the oath was only
parties had never once repented their
n, or wished themselves unmarried

, a town of Persia, in the province of
eighty miles N. N. E. of Zareng.
, a town on the east coast of the island
n.
's ISLAND, a small island in the Chi-
Long. 113° 5′ E., lat. 11° 13′ N.
N-FOSSIL, in modern chemistry, a
body discovered in the parish of Cruwys-
d, Devon, a few years since, in the fol-
anner:—Some workmen, in sinking a
d arrived at a depth of ten feet from the
when they struck upon a spongy sub-
hich appeared to be a very thick cuticle
wn color: they soon found pieces of
solid fat of the same hue. At length
body of a hog was extricated, reduced
olor and substance of an Egyptian
the flesh was six inches thick, and the
it very long and elastic. On proceed-
work, a considerable number of hogs,
s sizes, were found in different posi-
some places two or three together, in
gly; the bodies, when exposed to the
retained their consistency, and the
continued for twelve feet; after which
, being sufficiently deep, was filled with
The ground was never known to have
ken up before; but here had formerly
onastery of Augustine friars. The fa-
ich preceded the present possessor has
of all remarkable events which have
in the parish during three centuries;
was no entry which could lead to a so-
the phenomenon. The Rev. Mr. Pol-
who obtained a specimen, mentions, in
ry of Devon, that the bed in which the
y was of stiff clay. He describes the
his possession to be very light, some-
ongy, mottled like mottled soap, and
of a sebaceous nature. On a slight
analysis, it was mostly soluble in
wine, while hot; but separated into
kes on cooling, in which it resembles
ti; but it was easily convertible into
eing boiled in a fixed alkaline lixivium.
rence to the above particulars it will
us that what is here termed a 'fossil'
nsisted of adipocere or animal fat, which
ntly been found in receptacles for the

NGEN, a town on the west coast of
d of Sumatra. Long. 6° 58′ E., lat.

BACONO, a river of the Caraccas, South America. It runs in the mountains near Truxillo, and serves as a line of demarcation to the provinces of Varinas and Venezuela. Thence passing through the plains, it enters the Guanare, which discharges its waters into the Portugueza. There is a settlement of the same name near its source.

BACONTHORPE, or BACONDORP (John), styled the resolute doctor, a learned monk, born in the thirteenth century at Baconsthorp, in Norfolk. He spent the early part of his life in the convent of Blackney, near Walsingham; whence he removed to Oxford, and thence to Paris; where he obtained degrees in divinity and law, and was esteemed the principal of the Averroists. In 1329 he returned to England, and was chosen twelfth provincial of the English Carmelites. In 1333 he was sent for to Rome; where, we are told, he first maintained the pope's sovereign authority in cases of divorce, but that he afterwards retracted his opinion. He died in London in 1346, with the character of a monk of genius and learning. He wrote, 1. Commentaria seu Quæstiones super Quatuor Libros Sententiarum; and 2. Compendium Legis Christi, et quodlibeta: both which underwent several editions at Paris, Milan, and Cremona. Leland, Bale, and Pits, mention a number of his works never published.

BACOPA, in botany, a genus of plants of the class pentandria, and order monogynia. Its generic characters are CAL. perianth, one-leaved: COR. one-petalled: STAM. filaments, five; antheræ, sagittate: PIST. germ, ovate; style short; stigma, headed: PER. capsule, one-celled; seeds, very many. The only species is the B. aquatica, native of Cayenne. *Linn. Spec. Plant.*

BACOUE (Leo), a French divine of the seventeenth century. He was first of the Protestant persuasion, but afterwards changed to the Roman Catholic faith, turned Franciscan, and was made bishop of Pamiers. He was author of a Latin poem on the education of a prince. He died in 1694, in his ninety-fourth year.

BACRAG, the same with Baccharach wine.

BACRAS, a town of Sennaar, in Africa, twenty-five miles east of Sennaar.

BACRE, a small town in the territory of Sierra Leone. Long. 12° 11′ W., lat. 8° 40′ N.

BACTISHUA (George Ebn), a Christian physician at the court of the caliph Almansor who sent him as a present 3000 dinars, with three beautiful girls to supply the place of his wife, who was old: Bactishua sent them back, observing that his religion forbad him to have more than one woman for his wife.

BACTRIA, or BACTRIANA, now Chorassan, or Khorasan, an ancient kingdom of Asia, bounded on the west by Margiana, on the north by the Oxus, on the south by Mount Paropismus, and on the east by the Asiatic Scythia and the country of the Massagetæ. It was a large, fruitful, and well-peopled country; containing, according to Ammianus Marcellinus, 1000 cities, though of these only a few are particularly mentioned; of which, that formerly called Maracanda, now Samarcand, is the most considerable. Of the history of this country we know but little. Authors agree that it was subdued first by the Assyrians, afterwards by Cyrus, and then by Alexander the Great. Afterwards it remained subject to Seleucus Nicator and his successors, till the time of Antiochus Theos; when Theodotus, from governor of that province, became king, and strengthened himself so effectually in his kingdom, while Antiochus was engaged in a war with Ptolemy Philadelphus, king of Egypt, that he could never afterwards dispossess him of his acquisitions. His posterity enjoyed the kingdom for some time, till they were driven out by the Scythians, who possessed Bactria during the reigns of Adrian, Antoninus Pius, &c. The Scythians were in their turn driven out by the Huns and Turks, and these often conquered by the Saracens and Tartars; although they were in possession of this country, in the time of Ladislaus IV. king of Hungary.

BACTRIANS, the inhabitants of Bactria. In ancient times they differed little in their manners from the Nomades; and being near neighbours of the Scythians, who were a very warlike people, the Bactrian soldiers were reckoned the best in the world. Their appearance was very savage; they being of an enormous stature, having rough beards, and long hair hanging down their shoulders. Some authors assert that they kept dogs on purpose to devour such as arrived at extreme old age, or who were exhausted by long sickness. They add, that for all their fierceness, the Bactrian husbands were such dupes to their wives, that they durst not complain of them even for conjugal infidelity, to which it seems the latter were very much addicted.

BACTRIANUS, in zoology, a species of the camel.

BACTRIS, in botany, a genus of plants of the class monœcia, order hexandria. Its generic characters are CAL. spathe universal, one-leaved: COR. one-petalled: STAM. filaments, six; antheræ, oblong: PIST. germ, ovate; style, very short; stigma, headed: PER. drupe, coriaceous, seed-nut, roundish. The species are, 1. B. minor fructibus, &c. seu cocos (quincensis) aculeata, &c. a shrub, native of South America. 2. B. major fructu, &c. seu fructus exoticus, a shrub, native of South America.

BACTRIS, in entomology, a species of bruchus.

BACTROPERATÆ, from *βακτρον*, a staff, and *πηρα*, a bag; an ancient appellation given to philosophers by way of contempt, denoting a man with a staff and a budget. It seems to be of this sect that Paschasius Radbertus speaks, under the corrupt names of Baccoperitæ, or Bacchionitæ, whom he describes as philosophers who, by way of contempt for earthly things, kept nothing but a dish to drink out of; and that one of this order seeing a peasant scooping up the water in his hand, threw away his cup as a superfluity.

BACULARES, a sect of Anabaptists, so called, as holding it unlawful to bear a sword, or any other arms, besides a staff.

BACULARIUS, in writers of the middle age, an ecclesiatical apparitor or verger: who carries a staff, baculus, in his hand, as an ensign of his office.

BACULE, in fortification, a kind of portcullis, or gate, made like a pit-fall with a counterpoise, and supported by two great stakes. It is usually made before the corps du guard, near the gate a place.

BACULI. See BACILLI.

BACULI STI. PAULI, batoons of St. Paul, kind of figured stones, of the same substance with those resembling the bristles of some American echini, called by Dr. Plott, lapides Judaica.

BACULO'METRY, *n. s.* From *baculus*, Lat. and *μετρον*. The art of measuring distances by one or more staves.

BACULOMETRY. See GEOMETRY.

BACULOSUS ECCLESIASTICUS, in some ancient laws, is used for a bishop, or abbot, dignified with the pastoral staff, or crozier.

BACULUS DIVINATORIUS, or VIRGULA DIVINA. See BAGUETTE DIVINATOIRE.

BACURIUS, or BATURIUS, king of the Iberians, a people on the side of the Caspian sea. One day being hunting, he lost sight of his company, through a great storm and sudden darkness; upon which he vowed to the God of his christian slave, that if he were delivered, he would worship him alone: the day breaking up immediately, he is said to have made good his promise, and became the apostle of his country.

BAD', *adj.* }
BAD'LY, *adv.* } *Quoad*, Dut.; Sax. bad; Ger. bös; probably connected
BAD'NESS, *n. s.* } with the Lat. *pejus*, worse, and the Heb. *bosch*. Comparative worse; superlative worst. Bad respects moral and physical qualities indiscriminately; whatever offends the taste and sentiments of a rational being, is bad; food is bad when it disagrees with the constitution; the air is bad which has any thing in it disagreeable to the senses or hurtful to the body; books are bad which only inflame the imagination and the passions. In one word, bad is equally descriptive of mental, moral, and corporeal disease, and implies misfortune or delinquency, only from its application. Badly means in the manner of bad. It is always annexed to the action; but never to the quality of things.

> 'Tis good; though music oft hath such a charm,
> To make *bad* good, and good provoke to harm.
> *Shakspeare.*
>
> How goes the day with us? O tell me, Hubert.
> *Badly*, I fear. How fares your majesty? *Id.*
>
> It was not your brother's evil disposition made him seek his death; but a provoking merit, set a work by a reproveable *badness* in himself. *Id.*
>
> Thou may'st repent,
> And one *bad* act, with many deeds well done,
> May'st cover. *Milton.*
>
> Thus will the latter, as the former, world
> Still tend from *bad* to worse. *Id.*
>
> Our unhappy fates
> Mix thee amongst the *bad*, or make thee run
> Too near the paths which virtue bids thee shun.
> *Prior.*
>
> Daughter of Jove, relentless power,
> Thou tamer of the human breast,
> Whose iron scourge, and tort'ring hour,
> The *bad* affright—afflict the best. *Gray.*
>
> The sun his annual course obliquely made,
> Good days contracted, and enlarg'd the *bad*.
> *Dryden.*

was *bad* for his eyes, writing made his
Addison.

see how the *badness* of the weather could
's fault.
Id.

one convenience in the city, which makes
ls for the *badness* of the pavement.
Id. on Italy.

The preterite of bid.

uncil was not longe for to seche,
ht it was not worth to make it wist,
ted withouten more avise,
him say his verdict as him leste. *Chaucer.*

in earnest of greater honour,
, from him, call thee Thane of Cawder.
Shakspeare.

She thank'd me,
ne, if I had a friend that lov'd her,
t teach him how to tell my story,
ould woo her.
Id.

l and nature link'd the general frame,
self-love and social be the same. *Pope.*

, O hope, with eyes so fair,
hy delighted measure?
per'd promis'd pleasure,
e lovely scenes at distance hail! *Collins.*

GIS, a town of Persia, in the province
san, forty miles north of Fusheng.

OZ, or BADAJOX, a large and strong
capital of Estremadura, in Spain. It
n an eminence on the south side of the
over which there is a bridge of twenty-
s, and nearly 1900 feet in length, said
en founded by the Romans. On this
Portuguese were defeated in 1661, by
of Austria. Here are also five ancient
he public buildings, with the exception
hedral, merit no notice: the only ma-
is hats. Population 14,300. The
ax Augusta, of which Badajoz is sup-
e a corruption, stood on much higher
Badajoz has always been regarded as
ant barrier against Portugal; from
rs of which it is little more than four
e Goths captured it in the fifth cen-
Moors in the eighth, and Alphonso of
conquered it in 1230. Lord Welling-
ed Badajoz on the 18th of March,
breaches having been made on the
ril, it was assaulted on the same night.
icton established himself in the castle;
epeated attempts upon the town itself,
troops were obliged to retire: the
of the castle, however, so far com-
he works, that the French comman-
ght it advisable to surrender: 1200
of a garrison of 5000, were killed or
during the siege, and of the besiegers,
d Portuguese, upwards of 4000. But
sion of Badajoz, in conjunction with
Rodrigo, secured the defence of Por-
was thought well worth the price paid
e bishop of Badajoz, suffragan to the
of St. Jago, has under his inspection
l chapter, an archdeaconry, and fifty
The chapter is composed of seven
, twelve canons, four prebendaries,
ubprebendaries. There are besides in
five parish churches, seven monasteries, five nunneries, and five hospitals. It is the residence of the captain-general and intendant of Spanish Estremadura, a civil and military governor, a royal lieutenant, an alcade major, and a contador. It has fourteen companies of militia, a garrison, two forts (Cristobal and las Pardaleras), and an arsenal. It is eighty-two miles N. N. W. of Seville, forty-nine S. of Alcantara. Long. 6° 47′ W., lat. 38° 49′ N.

BADALONA, or BADELONA, a sea-port town of Spain, in Catalonia, with a citadel. Earl Peterborough landed here with the arch-duke Charles in 1704. Four miles north-east of Barcelona. Long. 2° 7′ E., lat. 41° 25′ N.

BADANACOUPY, a town of the Mysore, Hindostan, twenty-eight miles south of Seringapatam.

BADAR, a town of Hindostan, in the province of Bejapour, on the south side of the Krishna, thirty miles south of Mirjee. Long. 75° 32′ E., lat. 16° 40′ N.

BADASKY, a town of Siberia, in the government of Irkutzk, on the river Angara, eighty miles N. N. W. of Irkutzk.

BADCOCK (Samuel), the son of a reputable butcher, was born at St Molton, Devonshire, in 1747, and bred a dissenting clergyman. He was first pastor at Beer-Regis in Dorsetshire, and afterwards at Barnstaple, for about ten years. Here meeting with some of Dr. Priestley's publications, he paid the Dr. a visit, and established a correspondence with him. Upon investigation of the subject, however, he found it impossible to embrace Unitarianism. In 1777 he removed to his birth-place, and in 1780, engaged as a writer in the Monthly Review. The controversy then agitated by Dr. Priestly, Price, and others, respecting the materiality of the soul, led him to publish his thoughts upon the subject, in a pamphlet entitled, A Slight Sketch of the Controversy between Dr. Priestly and his Opponents; which was repeatedly quoted with great approbation. In 1781 he wrote a poem, entitled the Hermitage, and reviewed Madan's Thelypthora, greatly to the satisfaction of the public. In the controversy concerning the authenticity of Rowley's Poems, he took the negative side, and displayed his usual ingenuity. In the Monthly Review for 1785, he attacked Dr. Priestly's History of the Early Opinions relative to Jesus Christ, with such strength of reasoning, that the doctor, without knowing his antagonist, complimented him in his Reply, as a formidable and respectable antagonist.' Being applied to by Dr. White, to assist him in completing his Bampton lectures, he wrote the greater part of the first, third, fourth, fifth, seventh and eighth; with part of the notes subjoined to them. In 1787, having expressed an intention of conforming to the established church, he was ordained in Exeter cathedral by his friend bishop Ross; who gave him the order of deacon and priest, on two succeeding Sundays. He died May 19th, 1788, at the house of his friend Sir John Chichester, bart. in May-fair. His disposition was gentle, humane, and lively; his judgment acute and comprehensive; and his literary attainments great and various. He was equally eminent as a preacher and a writer.

BADDAMMY, a town of Hindostan, in the province of Bejapour, in the territories of the Mahrattas. It is a place of some strength. Thirty miles south-east of Merritch. Long. 74° 54 E., lat. 16° 6' N.

BADDERLOCKS, in natural history, a Scottish name given to the fucus esculentus, or eatable sea-weed. It is about four feet long, and seven or eight inches wide, but varies in length from three yards to a foot, and in breadth, from a foot to two inches; the substance is thin, membranaceous, and pellucid; the color, green or olive. This fucus is eaten in the north of Scotland both by men and cattle, and is in its greatest perfection in September; that which is eaten by the common people about Edinburgh is the F. PALMATUS, DULSE, or DILS, which see.

BADEAUT, LOCH, or, as it is erroneously spelt in some maps, BADWELL, a good harbour of Scotland, on the coast of Sutherland, in the parish of Edderachylis; where shipping of all sizes can enter, and moor close to the land, in perfect safety.

BADEN, in geography, formerly a margravate of Germany, in the circle of Suabia, stretching along the east bank of the Rhine, and forming, at present, the most important part of a grand duchy of the same name. It consisted of two divisions, viz. Baden-Baden, and Baden-Durlach; of which the former, and part of the latter, formed a compact territory, surrounded by Spire, Wirtemberg, the bishopric of Strasburg, and the Rhine. The country is for the most part level, but intersected on the east by branches of the hilly Schwartzwald, or Black Forest. The most considerable part of Baden-Durlach lay disjointed and insulated towards the south; and that part in the upper margraviate lying in the direction of Bale, was covered with mountains, except in the immediate vicinity of the Rhine. These divisions, taken together with the county of Eberstein, include a space of 1186 square miles, and a population of more than 180,000 inhabitants, independent of the military. Within the limits of this margravate were seventeen towns, fourteen boroughs, and upwards of five hundred villages and hamlets; the whole yielding an annual revenue of nearly £150,000 sterling. The country abounds with wood, wine, iron, cobalt, and silver. The Rhine which flows over the whole surface, from north to south, supplies abundance of excellent salmon. Whilst the flax, hemp, linen, and fruits, which are found in considerable quantities, not only supply the aggregate home consumption of the inhabitants, but form important articles of exportation. Silk has also been cultivated here; but not with any great advantage. The principal manufactures are of cloth, stuffs, stockings, jewellery, &c. There is also one of steel, at Pfortzheim, and one of beautiful earthenware at Durlach.

The house of Baden is descended from Herman, second son of Berthold I. duke of Zahringen, who died A. D. 1074. About the middle of the sixteenth century it split into the two lines of Baden-Baden, and Baden-Durlach, in which state it continued for some time; but, on the extinction of the former, in 1771, the latter succeeded to the whole inheritance. At the diet of the empire the margrave of Baden had three votes in the council of princes, and one in the bench of counts, in virtue of his title as count of Eberstein. Before the memorable revolution in France, this prince possessed the following territories: his patrimonial lands, different territories in Suabia and Bohemia, portions of the county of Sponheim-Graftenstein, together with the bailiwic of Roth on the French side of the Rhine, the lordships of Rodemachern and Hespringen, in Luxemberg, and several estates in Alsace; but when the possessions on the left bank of the Rhine were ceded to France by the peace of Luneville, concluded on the 9th of February, 1801, the German princes were indemnified for their losses by the secularisation of ecclesiastical possessions; the reduction of the imperial cities, and other alterations on the right bank of the Rhine, and the margrave of Baden on that occasion acquired the bishopric of Constance, part of Bale-Strasburg, and Spire, several bailiwics of the Lower Palatinate, and in Hesse, the lordship of Lahr, a number of secularised abbeys, and several imperial towns, together with the title of elector, and three additional votes at the diet. His augmented possessions at this time contained a territory of 2770 English square miles, and a population of 410,000 inhabitants, yielding an annual revenue £372,000 sterling; and, in the year 1803 were separated into three divisions, viz. the margraviate, the palatinate, and the upper principality.

When the coalition was formed against France in 1805, Bavaria, Wirtemberg, and Baden, were the allies of Buonaparte; and after the defeat of the confederated powers at Austerlitz had led to the peace of Presburg, and the subsequent formation of the Rhenish confederation in 1806, these states participated in the ceded possessions. Baden was erected into a grand duchy, and in exchange for the towns and territory of Biberach, which had been reduced from its imperial dignity, and assigned to Baden, in 1802, and now ceded by that government to Wirtemberg, she received the following accessions, the towns and territories of Billingen and Baeunlingen, the greater part of the Brisgau, the principality of Heitersheim, the county of Bondorf, the district of Ortenau, the commandery of Bengen, and the possessions of the provincial nobility; also the sovereignty over a great part of Furstenberg, Salm-Krautheim, and Loevenstein-Werheim, as well as over the whole of the Clettgau and Theugen. The county of Nellenburg was shortly aftewards added, together with several adjacent territories, and by means of new acquisitions and interchanges, the detached districts on the lake of Constance were rendered contiguous to the other dominions. These acquisitions raised the importance of Baden, and were all guaranteed to the grand duke, in 1815, by the Congress at Vienna.

Baden, in its present state, therefore, remains to be considered as a grand duchy of Germany, including the territories already described. Its division into a landgraviate, a margraviate, and a palatinate, or the provinces of the Upper, Middle, and Lower Rhine, was superseded in 1809, two years after its commencement, by the following distribution into nine circles, thus peopled, according to Mr. Hassel's statistics:

Circles.	Population.	No.	Chief Towns.	Population.
Lake (Seekreis) . .	89,604	1	Constance	4,503
Danube	72,735	2	Villingen	3,316
Weisen	116,954	3	Lorrach	1,906
Treisam	125,867	4	Freyburg	10,108
Kinzig	117,640	5	Offenburg	2,888
Murg	85,112	6	Rastadt	4,204
Pfinz and Enz . . .	131,518	7	Durlach	3,916
Neckar	166,818	8	Manheim	18,213
Maine and Tauber .	95,382	9	Wertheim	3,227
	1,001,630			52,281

eneral superintendance of the circles ed two divisions of the civil government nheim and Freyburgh, besides which ircles individually has a director and lors of its own. For the adminisistice there are inferior courts, and three courts of appeal at Freyburg, l Manheim, together with an upper town last mentioned, analagous to d in France the 'Court of Cassation.' code, also commonly called the code , was introduced during the usuronaparte, and is still in force, with a ations. The seat of the government arlsruhe, where the Grand Duke rethe designation of Royal Highness. ur ministers connected with the exeof government, viz. those of the ance, justice, and war. The legiss conducted by the Baden cabinet, ministerial conference, of which the , hereditary duke, or, failing both, inister is president. The government nanifested considerable solicitude for of the people, by the formation of abolition of feudal vassalage, the t of an excellent system of forest ove all, by the erection and endowols, academies, and public libraries. l of these are at Heidelberg, Manin, and Carlsruhe, Heberlingen, Rastadt, Bruchsal, &c. Religious also universally granted, although of the Grand Duke and national t is Lutheranism.

thus enumerates the different re-

Catholics	620,000
ns	305,000
ts	61,000
. . . .	15,080
ites	1,290

e of Baden is beautifully diversified riety of landscape, hill and dale, nountain, breaking on the sight in ession. The climate is agreeable, generally speaking, fertile; the only le of cultivation being a portion of orest, in Brisgau. The country is y the Maine and the Neckar, and the west by the Rhine; tributary to nerous smaller rivers and streams, from several of which the circles derive their names. The country bordering upon Switzerland is mountainous, and a chain runs from the confines of that division through the southern part of Baden into the kingdom of Wirtemberg. It afterwards forms a part of the separating boundary between them, and is joined by another chain stretching from east to west, over the whole breadth of the southern region.

Perhaps one of the most beautiful portions of this grand duchy is the country lying round Heidelberg and its suburbs. The town itself exhibits a romantic site, mild air, delightful prospects, curious and extensive subterranean walks, which have been lately closed, an ancient electorial palace; but the environs, if possible, are still more beautiful. Manheim is also well situated, and forms a delightful appearance at the confluence of the Neckar and the Rhine. At the commencement of the seventeenth century, it was only a pleasant village, but being shortly after fixed upon as the residence of the elector, and seat of the court, it became a flourishing place, although when the court was removed, in 1777, the town considerably declined. The palace of the Grand Duke, the tower of the observatory, the custom house, churches, and other publiç buildings, together with the gallery of paintings, cabinet of antiquities, &c. are objects worthy of notice; as are also the bridge of boats over the Neckar, and the flying bridge over the Rhine. The horses of Baden are an excellent breed. In other respects the domestic and wild animals resemble those of the other states of Germany.

Baden, a town of Germany, in the grand duchy of the same name, formerly the capital of the upper margraviate, but included, since the the year 1810, in the circle of the Murg. The town is seated among hills, on rocky and uneven ground, which renders the streets inconvenient and crooked. It derives its name from its baths, the word bad, in German, signifying bath. These baths were known to the Romans before the Christian era, and are supplied by upwards of 300 mineral springs, the waters of which are strongly impregnated with sulphur, salt, and alum. Some of these springs are hot, and are accounted good in nervous cases. Baden contains a population of 2000 inhabitants, and is now the head of an upper bailiwic. It has a lyceum, with several flourishing manufactures of earthenware, potash, candles, soap, and leather. The ancient castle, now in ruins, standing on a neighbouring eminence, overlooks the river Oelbach, commanding the pleasing and extensive prospects of a beautiful wine country. The town is twenty-two miles N. E. of Strasburg, and forty S. S.W. of Heidelburg. Long. 8° 18′ E., lat. 48° 46′ N.

Baden, a small town of Lower Austria, seated on the rivulet of Schwocha, in a plain not far from a ridge of hills which runs out from the mountain Cetius. It is much frequented by the people of Vienna, and the neighbouring region, on account of its warm baths, which are said to be twelve in number, and beneficial in disorders of the head, as also for the gout, dropsy, and most chronic distempers. It contains three churches, 250 houses, and 1500 population, is surrounded by walls, and is twelve miles S.S. W. of Vienna. Long. 16° 14′ E., lat. 48° 2′ N.

Baden, a district of Switzerland, in the canton of Aargau, bounded by Suabia on the north, Zurich on the east, Lucerne on the South, and Aargau proper on the west. It is thirty miles in length, and from eight to twelve in breadth, including a territory of 176 square miles; and, according to an enumeration made in 1803, contained nearly 47,000 inhabitants, which have since increased considerably. This country is one of the finest in Switzerland, and is watered by three navigable rivers, the Limmet, the Russ, and the Aar. It is divided into three parts and eight bailiwics, producing great abundance of corn, fruit, and wine. Before the peace of 1712, this district formed a separate canton, but when the articles of treaty were concluded between Zurich and Berne, it was divided among these cantons and that of Glaris. The two first seizing upon seven-eighths, and the last the one-eighth then remaining. In the constitution of 1798 it was restored to its original independence, but in the re-organization of the cantons by the emperor Napoleon, in 1803, it was united to that of Aargau, in connexion with which it has ever since remained.

Baden, the capital of the above district, is a small town containing about 1700 inhabitants, and carrying on a considerable trade. It is seated on the side of the Limmet, in a plain flanked by two hills, between which the river runs. This city owes its rise to its baths, which were famous before the Christian era, and known to the Romans by the name of Thermæ Helveticæ. Several monuments of antiquity have been found here, particularly in 1420; when the inhabitants, on opening the large spring of the baths, found statues of several heathen gods, made of alabaster, Roman coins, of Augustus, Vespasian, Decius, &c. made of bronze, and several medals of the Roman emperors, of gold, silver, copper, and bronze. There are two churches in Baden; one of which is collegiate, and makes a good appearance, and the other a monastery of the Capuchins, near the town-house. The inhabitants are rigid Roman Catholics, and formerly behaved in a most insolent manner to the Protestants, but they are now obliged by their masters to be more submissive. In this town were held formerly the general assemblies of the canton, who met in a handsome room, fitted up for their reception within the Capuchin's monastery; here, too, the negociations for peace between France and the empire, which had been opened at Rastadt, were brought to a close, on the seventh of September, 1714. The town at present chooses its own magistrates, and enjoys other privileges. The governor resides in a fine castle on the other side the Limmet, erected after the destruction of the old edifice in 1712; a handsome wooden bridge hangs over the river, forming a beautiful entrance to the castle, and in front of this magnificent residence is a stone pillar erected in honor of Trajan, who paved a road in this country, eighty-five Italian miles in length. The baths, which are on each side the river, are a quarter of a league from the city. Joining to the small baths there is a village, and to the village a town, which may pass for a second Baden. It is seated on a hill, of which the ascent is steep. There the baths are brought into inns and private houses, by means of pipes, which are about sixty in all. There are also public baths in the middle of the town, from a spring which rises in the street, where the poor bathe gratis, but they are exposed quite naked to all that pass by. All the baths are hot, and one to so great a degree as to scald the hand. The springs, which originate in a place called Ort-Zum-Baden, are eight in number, and are impregnated with a great deal of sulphur, accompanied with a little alum and nitre. The waters are used for drinking, as well as bathing, and are said to cure all diseases from a cold cause, head-aches, vertigos, &c. They strengthen the senses, cure diseases of the breast and bowels, asthmas, and obstructions, and are peculiarly excellent for diseases of women. Baden is about fourteen miles N. W. of Zurich, twenty-seven S. E. of Basle. Long. 8° 12′ E., lat. 47° 24′ N.

Baden, a parochial village of Switzerland, in the Valais, jurisdiction of Leuck. Here is the celebrated bath commonly called the bath of Leuck, or Valais, which is of heat sufficient to boil an egg, and the water of which is used by the inhabitants both for the purposes of bathing and drinking.

BADENOCH, a large district of Inverness-shire, of which it is the most easterly part, bounded by Inverness on the north, Moray on the east, Athol on the south, and Lochaber on the west. It extends about thirty-three miles in length from east to west, and twenty-seven from north-east to south-west, where it is broadest. It has no considerable town, and is very barren and hilly, but abounds with deer and other kinds of game.

BADENS (Francis), a historical and portrait painter, was born at Antwerp in 1751, and first initiated in the art by his father. Having visited Rome, he formed an excellent taste for design, and a manner exceedingly pleasing. On his return, he was usually distinguished by the name of the Italian painter. His touch was light and spirited, and his coloring warm; and he was the first who introduced a good taste in coloring among his countrymen. While his acknowledged merit was rewarded with every public testimony of esteem, he received an account of the death of his brother, who had been assassinated on a journey; and the intelligence affected him

, that it occasioned his own death sud-
1603.
ERALLY, a town of Hindostan, in the
of Bejapour, seventeen miles south-west
ug.
EW (Richard de), the original founder of
ll, Cambridge. He was born at Badow,
; and in 1326 was chancellor of Cam-
when he laid the foundation of a building
he gave the name of University-hall.
ng afterwards burnt down, was rebuilt
ughter of Sir Gilbert de Clare, earl of
ter, and named Clare-hall.
EY, a town of Persia, in the province of
an, 140 miles north-west of Herat.
GE, *v. a.* & *n. s.* A word of uncertain
gy; derived by Junius from bode or
messenger, and supposed to be cor-
from badage, the credential of a mes-
but taken by Skinner and Minshew
gghe, Dut. a jewel, or *bague*, Fr. a ring.
s to come from *bajulo*, Lat. to carry,
stantive denotes a mark; or ornament
show the relation of the wearer to any
or cause. It also signifies a token of
character. An outward and visible dis-
, either honorable or disgraceful.

> his breast a bloody cross he bore,
> resemblance of his dying lord;
> se sweet sake that glorious *badge* he wore.
> *Spenser.*
>
> avage tigress on her helmet lies;
> amous badge Clarinda us'd to bear. *Fairfax.*
> the *badge* of these men, then say if they be
> *Shakspeare.*
> I but know thee by thy household *badge*. *Id.*
> mercy is nobility's true *badge*. *Id.*
> Your royal father's murdered——
> ——Oh, by whom!——
> of his chamber, as it seem'd had done 't;
> hands and faces were all *badg'd* with blood,
> re their daggers. *Id.*
> im not bear the *badges* of a wreck,
> g with a blue table on his back. *Dryden.*
> utward splendour of his office is the *badge* and
> n of that sacred character which he inwardly
> *Atterbury.*

GE, in naval architecture, a sort of orna-
laced on the outside of small ships, very
e stern, containing either a window for the
ence of the cabin, or a representation of
commonly decorated with marine figures,
instruments, or such like emblems.
GELESS, *adj.* From badge and less.
no badge.

> s his light heels their fearful flight can take,
> t some *badgeless* blue upon his back.
> *Bishop Hall's Satires.*

DGER, *n. s.* Perhaps from the Lat. *bajulus*,
r; but by Junius derived from the badger,
ure who stows up his provision. One
ys corn and victuals in one place, and
it unto another.'—*Cowel.*

GER, *n. s.* From *bedour*, Fr. *melis*, Lat.
mal that earths in the ground, and used
unted.

> a brock, or *badger*, hath legs of one side
> han the other, is received not only by theorists
> xperienced believers, but most who behold
> ly. *Brown.*

BADGER, in zoology, the English name of a species of ursus. See URSUS.

BADGER-BAITING, or BADGER-HUNTING. The badger has suffered more perhaps from vulgar prejudices than any other animal. He has been accused of destroying lambs and rabbits: the first unquestionably without foundation, and it is uncertain whether the last charge be better supported; for many naturalists maintain that his sole food consists of roots, fruits, grass, insects, and frogs. From this general and double accusation, however, the harmless badger has been selected to make sport, as it is called, for the vulgar, in both hunting and baiting.

Hunting the badger is in general only performed by moonlight: the badger, from his natural habits, being never to be found above-ground by day. In this sport the hunters are obliged to oppose art to cunning, and obtain by stratagem what they cannot effect by strength. At a late hour in the evening, when the badger is naturally concluded to have left his kennel or his castle in search of food, some of the party, as previously adjusted, proceed to place a sack at length within the burrow, so constructed that the mouth of the sack directly corresponds with the mouth of the earth, and is secured in that position by means of a willow hoop, which, from its pliability, readily submits to the form required. This part of the business being completed, the parties withdrawn, and the signal whistle given, their distant companions lay on the dogs, either hounds, terriers, lurchers, or spaniels, encouraging them through the neighbouring woods, coppices, and hedge-rows; which the badgers abroad no sooner find, than being alarmed, and well knowing their inability to continue a state of warfare so much out of their own element, instantly make to the earth for shelter; where, for want of an alternative, and oppressed with fear, they rush into certain destruction, by entering the sack: being entangled in which, they are soon secured by those who are fixed near the spot for that purpose. If the badger escape by the ill-construction or accidental falling of the sack, and safely enter the earth, digging him out is not only a very laborious but very precarious attempt; for the badger, from instinctive ingenuity, will be generally found to have formed his retreat before he can be reached: to render which the more easy, he usually constructs his kennel among the roots of some old pollard, in the banks of moors, or underneath some hollow tree; from the spreading root branches of which the burrows run in such various and perplexing directions, that his assailants are often compelled, after tiring themselves by digging fifteen or twenty feet, to relinquish the pursuit; corroborating the opinion of the common people, that in a loose and sandy soil badgers can make a way as fast as their hunters can pursue them: whence drawn-battles in such situations are very common results.

Badger-baiting is a different sport, and if possible of a lower description. It consists in attacking the animal at a distance from his burrow, with dogs of almost any kind; but most successfully with the terrier. The badger is so rapid in his motions, that the dogs are often desperately wounded, and compelled to give up the contest. The looseness and thickness of the badger's skin are admirably contrived for his advantage; in consequence of the latter, and especially in conjunction with the coarseness and toughness of his hair, it is difficult for the dogs to lay hold of him; and in consequence of the former, he finds great facility of escaping from their grasp when they have succeeded. These sports have given rise to a very expressive proverb of 'badgering a man with a request' for payment of debts, &c.'

Ba'dger-legged. From badger and legged. Having legs of an unequal length, as the badger is supposed to have.

His body crooked all over, big-bellied, *badger-legged*, and his complexion swarthy. *L'Estrange.*

Badgum, a town of Hindostan in Dowlatabad, six miles S. S. W. of Oudighir.

BADHUNTOUL; Gael. a den of refuge; a place in the parish of Fordice, in Banffshire, in former times used as a place of refuge from the Danish invasions.

BADIA, in conchology, 1. A species of cyprea having an oblong gibbous shell.—Gmelin. 2. A species of helix, called by Born, helix ungulina; and, 3. A species of patella.

Badia (D.), a Spaniard, who devoted himself, in 1803, and four or five following years, to the profession of Mahommedanism, as a means of exploring Mahommedan countries. He assumed the name of Ali Bey el Abassi, and submitted, it is said, to the most distinguishing rite of Islamism, the better to pursue his plans. Mr. Burckhardt writes thus, respecting him, from Aleppo: 'He called himself Ali Bey, and professed to be born of Tunisian parents in Spain, and to have received his education in that country. Spanish appears to be his native language, besides which he spoke French, a little Italian, and the Moggrabeyan dialect of Arabic, but badly. He came to Aleppo by the way of Cairo, Yaffa, and Damascus, with the strongest letters of recommendation from the Spanish government to all its agents, and an open credit upon them. He seemed to be a particular friend of the Prince of Peace, for whom he was collecting antiques: and from the manner in which it was known that he was afterwards received by the Spanish ambassador, at his arrival at Constantinople, he must have been a man of distinction. The description of his figure, and what is related of his travels, called to my recollection the Spaniard Badia, and his miniature in your library. He was a man of middling size, long thin head, black eyes, large nose, long black beard, and feet that indicated the former wearing of tight shoes. He professed to have travelled in Barbary, to have crossed the Lybian desert, between Barbary and Egypt, and from Cairo to have gone to Mecca and back. He travelled with eastern magnificence, but here he was rather shy of showing himself out of doors: he never walked out but on Fridays, to the prayers of noon in the great mosque. One of the before-mentioned dervises told me that there had been a great deal of talking about this Ali Bey, at Damascus and Hamar: they suspected him of being a Christian, but his great liberality and the pressing letters which he brought to all people of consequence, stopped all further inquiry. He was busily employed in arranging and putting in order his journal during the two months of his stay at Aleppo.' His travels were published at London and in Paris, in 1814, in 2 vols. 8vo. under his assumed name. He is now known to have been an agent of Godoy, the Prince of the Peace, employed at the instigation of Napoleon. He died in Spain shortly after his return to Europe.

Badia, La, a town of Italy, on the Adigetto, at the place where it branches from the Adige. It is small and open, but well-built, populous and wealthy; and was formerly called Castello Piazzone, having two castles. The Adige is here crossed by a handsome bridge five miles from Legnano, and fifteen W. S. W. of Rovigo.

BADIAGA, in the materia medica, the name of a sort of spongy plant, common in the shops of Moscow and some other northern kingdoms. It is used to take away the livid marks, occasioned by blows and bruises, which the powder is said to do in a night's time. We owe the knowledge of this medicine, and its history, to Buxbaum. He observes, that the plant is always found under water, and is of a very peculiar nature. It somewhat resembles the alcyonium, and somewhat the sponge, but differs from both, it being full of small round granules, resembling seeds. It is of a loose, light, and spongy structure; is made up of a number of fibres of an herbaceous matter, and is dry, rigid, and friable between the fingers. Such is the generic character of the badiaga, of which this accurate observer has found three different species. Linnæus makes it a species of sponge.

BADIANA, Badiane, or Bandian, the seed of a tree which grows in China, and smells like anise seed. The Chinese, and the Dutch in imitation of them, sometimes use the badiana to give their tea an aromatic taste.

BADIGEON, in joiner work, saw-dust mixed with strong glue, wherewith they fill up the chaps and other defects in the wood after it is wrought.

Badigeon, in statuary, a mixture of plaster and free-stone well ground together, and sifted; used by statuaries to fill up the little holes, and repair the defects in stones, whereof they make their statues and other work.

BADILE (Antonio), history and portrait painter, born at Vienna in 1480, was an eminent artist: but derived greater honor from having two such disciples as Paolo Veronese and Baptista Zelotti. He died in 1560. His coloring, especially of his carnations, was beautiful; and his portraits preserved the perfect resemblance of real life.

BADINAGE, foolery, buffoonery.

BADIS, a fortress of Livonia, subject to Russia, twenty miles east of Revel.

BADITES, in botany, the Nymphæa, or clava Herculis: the root of which, according to Marcellus Empiricus, bruised and eaten with vinegar for ten days by a boy, makes him an eunuch without excision.

BADKIS, or Pasin, a town of Persia in the province of Khorassan, thirty-six miles north of Herat. Long. 60° 27' E. lat. 35° 30. N.

ONG, a district of the island of Balli,
he Dutch had a small settlement, after-
ken by the British.

OO, two towns in the kingdom of
in Africa. They both united their
in enforcing the payment of custom
r. Park.

OUCE, in natural history, the East
name of a fruit, very common in that
the world. It is round, and of the size
of our common apples; yellow on the
and white within. It resembles the
stan; but its pulp is more transparent;
is very agreeable, and has some resem-
o that of our gooseberries.

RACHILLUM, or the Sacred Moun-
town of Hindostan, in Golconda, on the
st side of the river Godavery, consisting
uts. Here is a pagoda of great celebrity.
seventy-two miles N.W. of Rajamun-
0 east of Hydrabad, and 134 from
atam.

ROWLY, a town of Hindostan, in Guze-
een miles east of Surat.

RYCAZRAM, an extensive mountainous
on the northern borders of Hindostan,
the thirty-first and thirty-third degrees of
latitude; very unproductive and thinly
d.

SHIFT Bay; a bay on the coast of Pa-
in the straits of Magellan. Long. 74°
lat. 53° 35 S.

UEL (Claude), a French protestant di-
rn at Nismes. He went to Switzerland
where he taught philosophy and mathe-
and exercised his ministry till his death

ULATO, a town and territory of Naples,
ria Ultra, extremely productive in wine,
ey, turpentine, cotton and silk. Fourteen
S. E. of Squillace.

ULE, a town of Ceylon, fifty-four miles
Candy.

Y, a large town of Africa, in the kingdom
lli, governed by an independent chief,
e appellation of Faranba.

A, in botany, a genus of plants, of the
andria, and order monogynia. Its ge-
racter is cor. ringent, the tube very short,
p flat, tridentate; lower lip flat, bilobate:
locular, quadrivalvular, contorted: cal.
partite, equal.

CKEA, in botany, a genus of the octan-
der, and monogynia class of plants,
after Abraham Baecka, a friend of Lin-
The calyx is a permanent perianthium,
g of a single funnel-shaped leaf, cut
fragments at the brim; the corolla con-
five roundish petals inserted into the
the pericarpium is a globose capsule,
of four valves, and containing four cells,
are a few roundish angular seeds. The
re shrubs.

DOO, an extensive kingdom of central
uth of Tombuctoo, and east of Bam-
which latter country it is tributary. It
ed by a river called the Ba Nimma, des-
from the mountains of Cong. The inte-
tle known.

BAELAMA, in zoology, the Arabian name, according to Forskal, of a species of clupea.

BAENA, or Vaena, a town of Spain, in the Andalusian province of Cordova, surrounded with walls, and containing four parish churches, five religious houses, and 4800 inhabitants. Here are some excellent salt works. It is eighteen miles E. S. E. of Cordova.

BAEOBOTRYS, in botany, a genus of plants, of the class pentandria, and order monogynia. Its generic character are cor. tubulose, quinquefid: cal. double, superior; exterior of two leaves; inferior campanulate quinquedentate. Berry unilocular, many-seeded. Willdenow describes two species; one, a native of Arabia, is figured by Mart. Vahl. Symbola Botanica, tab. 6.

BAERSUIS, or Vekenstil (Henry), a printer and mathematician of the sixteenth century. He settled in Louvain, where he published Tables of the Longitudes and Latitudes of the Planets, in 1528.

BAERWALDE, or Barwalde, a town of New Mark of Brandenburg, in the Prussian states, circle of Konigsburgh, population 1500. Here Gustavus Adolphus entered into a secret treaty with France in 1631. It is thirteen miles N. N. W. of Custrin, and forty-two E. N. E. of Berlin.

BÆTERRÆ, an ancient town of the Tertosages in Gallia Narbonensis, on the east bank of the Obris. It is now called Besiers.

BÆTICA, a province of ancient Spain, so called from the river Bætis. It was bounded on the west by Lusitania; on the south by the Mediterranean, and Sinus Gaditanus; on the north by the Cantabric sea, now the Bay of Biscay. On the east and north east its limits cannot be so well ascertained, as they are known to have been in a continual state of fluctuation, each petty monarch having had an opportunity of encroaching upon his neighbour. The province was divided into two by the river Bætis, on the side of which, towards the Anas, were situated the Turdetani, from whence the kingdom was sometimes called Turdetania, though more generally Bæturia. On the other side, along the Mediterranean, were situated the Bastuli, Bastetani, and Contestani. The whole province of Bætica, according to the most probable account, is contained in what is now called Andalusia, part of the kingdom of Grenada.

BÆTIS, a famous river of ancient Spain, afterwards called Tartessus, and now Guadalquiver, or the Great River.

BÆTOLO, a town of ancient Spain, in the Terraconensis; now Badelona, in Catalonia.

BÆTURIA. See Bætica.

BÆTUS, in ichthyology, a name given by Aristotle, and others of the ancient Greeks, to the fish called by the Latin writers cottus; particularly to that species called by us the bull-head, or miller's thumb.

BÆTYLIA, anointed stones, worshipped by the Phœnicians, by the Greeks before the time of Cecrops, and by other barbarous nations. They were commonly of a black color, and consecrated to some god, as Saturn, Jupiter, the Sun, &c.—Some are of opinion that the origin of this practice is to be derived from the pillar of stone which Jacob erected, and near which he worshipped, at Bethel. These bætylia were much the object of the veneration of the ancient heathens. Many of their idols were no other. In reality, no sort of idol was more common in the eastern countries, than that of oblong stones erected, and hence termed by the Greeks, *κιονες*, pillars. In some parts of Egypt they were planted on both sides of the highways. In the temple of Heliogabalus in Syria, there was one pretended to have fallen from heaven. There was also a famous black stone in Phrygia, said to have fallen from heaven. The Romans sent for it, and the priests belonging to it, with much ceremony, Scipio Nasica being at the head of the embassy. The priests of Cybele carried a bætylion on their breasts representing the mother of the gods.

BÆTYLOS, the same with Bætylion; plural, Bætylia. See last article.

BAEZA, or Baeca, a town of Spain, in the province of Jaen, Andalusia. Its streets and squares are handsome, and it was in former times a place of considerable importance, the residence of a Moorish king. It was subsequently a bishop's see, and the seat of a university. At present it is fallen into decay, but has still two chapters, several parish churches and cloisters, a corregidor, a society under the title of economical, several good tanneries, and a population of 15,000. It is seventy miles N. N. E. of Cordova. Long. 3° 35′ W., lat. 38° 4′ N.

Baeza, a city of the province and government of Quixos and Macas, in the kingdom of Quito. It was formerly rich and populous, but has been wasted by the Indians. Lat. 26° S.

BAFFA, or Boro, a sea-port on the Grain Coast of Africa, which carries on a considerable trade in pepper. Long. 8° 52′ W., lat. 5° 10′ N.

Baffa, a sea-port town on the west coast of the island of Cyprus, the ancient Paphos, situated on a rocky eminence close to the sea. Its harbour is choked up with sand, and is generally avoided by mariners, because of its dangerous approach, and from its having no shelter from the violence of the winds. The Turks have built a castle on the point of a rock to the south-west, which is defended by artillery; and it is the residence of a Turkish aga. Of several Christian churches only one remains, in which the Greeks officiate; who still have a bishop here, suffragan of the archbishop of Nicosia. Pieces of fine rock crystal are sold here under the name of Baffa diamonds: amianthus also, of superior quality, is found in the neighbourhood. It is called cotton stone by the natives. Various ruins and some antiquities are scattered over the vicinity of Baffa, among which are many highly polished blackish marble columns, traditionally supposed by the inhabitants to have been the materials of the palace of Aphroditis. Further east, others of a large size denote the site of a temple. There is also cut out of the rock a subterraneous church, dedicated to the seven sleepers, and a large excavation, conjectured to have been a cistern. Long. 32° 18′ E., lat. 34° 48′ N.

Baffa, Cape, a cape on the south-west coast of the island of Cyprus. Long. 32° 18′ E., lat. 34° 57′ N.

BAFFETAS, or Baftas, a cloth made of
coarse white cotton thread, which con
the East Indies. That of Surat is the b

BAFFIN'S BAY; a large gulf o
North America, lies between seventy a
degrees of north latitude. It opens
Atlantic ocean through Baffin's and
straits, between Cape Chidley, on the
coast, and Cape Farewell on that of Wes
land; both of which are in about the
degree of north latitude; and aboun
whales and walrusses. On the south-
of Davis's straits it has a communica
Hudson's bay, through a cluster of isl
lat. 74° 20′; it communicates with Si
Lancaster's sound, through which Capta
passed triumphantly, and discovered
straits, Prince Regent's Inlet, &c.

BAF'FLE, *v. a.* & *n. s.* } In Fr. *bef*
Baf'fler, *n. s.* } *buffle*, an
Baf'fled, *adv.* } signifies to
the nose as an ox; that is, to amuse o
point; to perplex by a feint. Its genera
tation is eluding the schemes of others
trous management. It is sometimes e
by the words to defeat, to disconcert, a
found. Dr. Johnson employs these ter
definition of it. But Crabbe has well
guished them, and given them differen
of meaning in their application. Baffle e
less than defeat; defeat less than confou
disconcert less than all. Obstinacy, p
ance, skill, or art, baffles; force or viol
feats; awkward circumstances disconc
visitation of God confounds.

Where thou wilt, lad, I'll make one; an
call me villain, and *baffle* me. *Sh*

Go, *baffled* coward, lest I run upon thee.

They made a shift to think themselves gu
spite of all their sins; to break the precept, a
same time to *baffle* the curse.

He hath deserved to have the grace w
which he hath so long *baffled* and defied.

Experience, that great *baffler* of speculatio
us the thing is too possible, and brings, in
matter of fact to confute our suppositions.
Government of th

Etruria lost,
He brings to Turnus' aid his *baffled* host.

When the mind has brought itself to close
it may go on roundly. Every abstruse probl
intricate question, will not *baffle*, discourage,
it.

Now shepherds, to your helpless charge
Baffle the raging year, and fill their pens
With food at will.

BAG', *v. a.* & *n.* A sack, pouch, o
Either artificially constructed, or the
nature.

Cousin, away for England; haste before,
And, ere our coming, see thou shake the b
Of hoarding abbots; their imprison'd angel
Set thou at liberty. *S*
Sing on, sing on, for I can ne'er be cloy'
So may thy cows their burden'd *bags* dis

Two kids that in the valley stray'd
I found by chance, and to my fold convey'd
They drain two *bagging* udders every day.
Like a bee, *bagg'd* with his honey'd ven
He brings it to your hive. *Id. Dm*

we confess, beneath the patriot's cloak,
the crack'd *bag* the dropping guinea spoke.
Pope.

w a young fellow riding towards us full gal-
a bob wig and black silken *bag* tied to it.
Addison.

in commerce, a term signifying a certain of some particular commodity; a bag of , for instance, is about 300 weight; of eds, from 300 to 400; of pepper, from 00; of cotton yarn, from 2½ to 4¼, &c. used in most countries to put several coin in, either of gold, silver, brass, or Bankers, and others, who deal much in cash, label their bags of money, by tying or note at the mouth of the bag, signify- coin contained, the sum total, its weight, whom it was received. Tare is allowed bag.

in farriery, is when, in order to retrieve lost appetite, they put in an ounce of da, and as much powder of savin, into a be tied to the bit, keeping him bridled for rs several times a-day; as soon as the aken off, he will fall to eating. The same serve a long time.

in medicine and pharmacy, a kind of tion, prepared of proper ingredients, en- a bag, to be applied externally to a part , for present relief. Dispensatory writers cordial bags, used in deliquiums; bags ide, for the stomach, in weaknesses of the ; anodyne bags to ease pain in any part. nd ale are frequently medicated by put- them bags full of proper ingredients. ags, are composed of perfumes, scented , and the like, enclosed in bags, to give cy to clothes, &c.

A. See RUTA BAGA.

ADAT, or BAGALIN, a name by which l the carrier pigeon, the columba tabel- Moore. The name is probably a cor- of the word Bagdat, the city from whence sometimes brought to Europe; being brought thither from Bazora.

LAEN, or BUGELEN, a district in the Java, nearly about the centre of the om east to west. The dialects of Scindo his district, are said to be very distinct Javanese Proper. From the Bugelen he Sooloo language is supposed to be

AMADER, or BAGAMEDRI, a province inia in Africa: so named from the great of sheep bred in it; meder signifying earth, and bag a sheep. Its length is about sixty leagues, and its breadth ut formerly it was much more exten- eral of its provinces having been dis- d from it, and joined to that of Tigre. art of it, especially towards the east, is by wandering Gallas and Caffres.

TELLE, *n. s.* *Bagatelle*, Fr. A trifle; no importance.

s of hair rings and cypher'd seals;
trifles, serious *bagatelles*. *Prior.*

UDÆ, or BACAUDÆ, a faction of pea- malcontents, who ravaged Gaul about A. D. 290, and assumed the name Bagaudæ, which, according to some authors, signified, in the Gaelic language, forced rebels; according to others, robbers. After seven months' siege they stormed the city of Autun. Villages and open towns were everywhere abandoned to their ravages; and they shook off the yoke of slavery only to show their incompetency for freedom, by a perpetration of the most cruel barbarities. Two of their most daring leaders, Ælianus and Amandus, had the boldness to assume the title and decorations of the Cæsars; and the cabinets of the curious still contain medals which they coined. Maximian, when associated with Dioclesian in the imperial government, devoted himself to the reduction of the Bagaudæ. It has been said that they were Christians; but even Mr. Gibbon (ii. 123) rejects this fact.

BAGAUZE, the name given, in the Antilles, to the sugar-canes, after they have passed through the mill; they are dried, and used for boiling the sugar.

BAGDAD, or BAGDAT, a celebrated city and pachalic of Asia, in Arabian Irak, seated on the eastern banks of the Tigris, which is here upwards of 600 feet wide. It is 300 miles N.N.W. of Bassora, 210 south of Mosul, and 1350 east of Constantinople. This city is of an oblong figure, about 1500 paces in length, by 800 in breadth, environed with a high but ruined wall, and a deep ditch. It has six gates surmounted with cannon, a castle, and an armoury; but the whole of its defences are in a very feeble and contemptible state. Here are some handsome houses; the markets are well supplied, and the bazaars are magnificent, containing from 1200 to 1500 shops, loaded with every description of eastern merchandise. Bagdad, in fact, is the great link of communication between Asia Minor, Syria, and even Europe and the East. The chief imports from India are, gold brocade, cloths, sugar, pepper, tin, sandal-wood, iron, china-ware, spice, cutlery, arms, and broad-cloth; in return for which they send bullion, copper, gall-nuts, tamarisk, leather, and otto of roses. From Aleppo are imported European silk-stuffs, broad-cloth, steel, cochineal, gold thread, and several other European articles, which are brought in Greek vessels to Scanderoon. The imports from Persia are, shawls, carpets, silk, cotton, white cloth, leather, and saffron: and those from Constantinople are, bullion, furs, gold and silver thread, jewels, brocade, velvets, and otto of roses. Its principal manufactures are red and yellow leather (which is much esteemed), silk, cotton, and woollen stuffs; and latterly a foundry of cannon has been erected.

Bagdad exhibits the ruins of a number of antique buildings. On the west side of the river is a suburb connected with the city by a bridge of boats, upon which the Báb jisrí, (Bridge gate) opens. The great extent of this city anciently on the west, as well as on the east side of the river, appears from the ruins all round this suburb. Here are the tombs of many Mahommedan saints; among others, those of the Imàms Abù Hanífak and Hanbel, founders of two of the orthodox sects; and of Músa Kházim, one of the twelve Imàms, the successors of A so much venerated by the Persians. To the literary traveller it offers many other objects of interest; such as the tombs of Haroun Al Raschid, and his consort Zobeidah, so often mentioned in the Arabian Nights; and the remains of some fine mosques and colleges, monuments of the most brilliant period of Arabian history. But even the wrecks of many palaces and public buildings, celebrated by eastern writers, have not entirely disappeared.

Bagdad was founded by the caliph Abu Jafur Almansor in 766, and completed in four years. In the following century the celebrated Haroun Al Raschid reigned here, and under the auspices of Zobeïda, his queen, and the vizier Jaffer Barmakeed, it rose into great splendor and importance; but was almost totally destroyed by the Turks, 100 years later; and in the thirteenth century was stormed by the Tartar prince Holaku, the grandson of Jenghis Khan, who put the sovereign to death, and abolished the caliphate. Tamerlane seized upon Bagdad in the year 1416, and Kara Yusef in 1436. Shah Ismael, the first of the royal Persian house of Sefi, rendered himself master of it in the following century, since which time, it has been an object of constant contention between the Turks and Persians.

Bagdad sustained a memorable siege by the Turkish emperor Amurath IV. who, with an army of 300,000 men, reduced it to great extremities: it surrendered in 1638, on the promise of indemnity; but the savage victor, having gained possession of the place, put a great proportion of the inhabitants to the sword. During the following century, Nadir Shah endeavoured in vain to wrest it from the Turks, and was obliged to retire with disgrace; and in the course of later years its safety has been frequently menaced by the Wahabees. In 1750 the inhabitants prevailed upon the Porte to appoint the páshà whom they chose to name; and they have ever since maintained this species of virtual independence.

The commerce of Bagdad was once very extensive and flourishing; but, from the improvident oppression of its rulers, it has now greatly declined. It is however, a place of great resort; the residence of a pasha; and a constant resort of pilgrims. Tavernier rated the population in his time at 150,000, but they probably do not amount to 50,000 at present. This population consists of Arabs, Persians, Turks, Jews, Armenians, and other eastern Christians, who are represented as generally courteous to strangers, and of an independent spirit. The truth is, that the páshàs are sensible of the advantage of their distance from Constantinople, and obey or disobey the orders of the sultan, according to their own convenience.

Great extremes of heat and cold are felt here: in summer, especially when the sámm-yeli, or poisonous wind, blows, the inhabitants are obliged to take refuge in the well ventilated cellars with which most of the houses are provided: and in winter the cold is sufficient to produce ice half an inch thick. This is considered as intolerable; and many of the natives are said to perish by it. The natives are like-
wise subject to a cutaneous disorder,
no cure has yet been discovered: it a
the form of a pimple, then degenerates
ulcer, and at the end of eight or te
dries up of itself, leaving a promine
The inhabitants of Aleppo, and other
Syria, are also subject to this disease.

The pachalic, or vice-royalty, of which
is the capital, is one of the largest in the
dominions. It contains eighteen san
military divisions, and two districts of K
According to the present distribution of
pire, it comprehends all its south-easter
having Diyàr-boer and Mount Sinjah
north; Persia on the east; the Persian
the south; and the Euphrates on the
therefore very nearly corresponds with
sopotamia of the ancients. Its area
178,100 square miles. The pacha is com
in-chief of the troops stationed in his
next to him are the aghàs of the janissa
sipáhis. Their whole number amounts to
infantry and cavalry in nearly equal pro
A corps of 500 men, trained in the E
manner, which was raised a few years
still kept up.

This province has some very fertile sp
is too much exposed to the depredations
ditti to be cultivated in any proportion t
pabilities. It includes many celebrat
and towns, such as Bagdad, Bassora,
and Merdin.

The revenue derived from the custo
pitation-tax, occasional contributions
towns and cities, and the tribute levied
Arab tribes, does not exceed 7,500,000
or £375,000.

BAGDAGSHAN, a very ancient city
trict of Bokharia, in the province of
situated at the foot of the mountains w
parate Hindostan from Great Tartary.
is not large, but exceedingly strong by
tion; and belongs to the khan of Prop
haria, who uses it as a kind of state pri
is well built and very populous. It st
the north side of the river Amu, about 1
from its source; and is a great thoroug
the caravans designed for little Bukhari
inhabitants are enriched by mines of gol
and rubies, which are in the neighbo
and those who live at the foot of the m
gather gold and silver dust, brought dow
spring by torrents occasioned by the m
the snow on the top. It is 150 mile
Balkh.

BAGE (Robert), a novel-writer of
century, was the son of a paper-maker a
and born in 1728. He was brought u
same occupation as his father, but havin
for literature, he gained a knowledge
thematics, and of the French and Ital
guages. He wrote Mount Henneth, 2 vo
Barham Downs; The Fair Syrian; Jan
lace; Man as he is; and Hermsprong,
as he is not. The last two, which a
when the author was nearly seventy yea
were decidedly superior to the precedi
died at Tamworth in 1801. Three of th
novels of this writer have been repub

the ninth volume of Ballantyne's Novelist's Library, edited, with biographical prefaces, by Sir Walter Scott.

BAGFORD (John), an antiquary, and great collector of old English books, prints, &c. was born in London. He had been, in his younger days, a shoemaker; afterwards, a bookseller; and lastly, for the many curiosities wherewith he enriched the famous library of Dr. John Moore, bishop of Ely, his lordship got him admitted into the Charter-house. He was several times in Holland, and on the Continent, where he procured many valuable old books, prints, &c. some of which he disposed of to the late earl of Oxford, who purchased his collections, papers, &c. for his library. In 1707 were published, in the Philosophical Transactions, his Proposals for a General History of Printing. He died at Islington, May 15, 1716, aged 65; and was buried in the cemetery of the Charter-house.

BAG'GAGE, *n. s.* From *bag; baggage*; Fr. and from *bagaglia*, Ital. The furniture and utensils of an army; or any goods that are moveable. It is likewise employed to designate a dissolute woman of the baser sort, because such usually follow camps.

> No barricado for the belly; it will let in and out the enemy *bag* and *baggage*. *Shakspeare.*
>
> They were probably always in readiness, and carried among the *baggage* of the army. *Addison on Italy.*
>
> Dolabella designed, when his affairs grew desperate in Egypt, to pack up *bag* and *baggage*, and sail for Italy. *Arbuthnot.*
>
> A spark of indignation did rise in her, not to suffer such a *baggage* to win away any thing of hers. *Sidney.*
>
> When this *baggage* meets with a man who has vanity to credit relations, she turns him to account.

Baggage, in antiquity, was distinguished by the Romans into two sorts; a greater and less. The lesser was carried by the soldier on his back, and called sarcina; consisting of the things most necessary to life, and which he could not do without. Hence colligere sarcinas, packing up the baggage, is used for decamping, castra movere. The greater and heavier was carried on horses and in vehicles, and called ŏnera. Hence onera vehiculorum, sarcinæ hominum. The baggage horses were denominated sagmentarii equi. The Roman soldiers in their marches were heavily laden, in so much that they were called, by way of jest, muli mariani, and ærumnæ. They had four sorts of luggage, which they never went without, viz, buccellatum, or corn, utensils, valli, and arms. Cicero observes, that they used to carry with them above half a month's provisions; and we have instances in Livy, where they carried provisions for a whole month. Their utensils comprehended those proper for gathering fuel, dressing their meat, and even for fortification or entrenchment; and what is more, a chain for binding captives. For arms, the foot carried a spear, shield, saw, basket, rutrum, hatchet, lorum, falx, &c. Also stakes or pales, valli, for the sudden fortifying a camp; sometimes seven, or even twelve of these pales were carried by each man, though generally, as Pollybius tells us, only three or four. On the Trajan column we see soldiers represented with this fardle of corn, utensils, pales, &c. gathered into a bundle and laid on their shoulders. Thus inured to labour, they grew strong, and able to undergo any fatigue in battle; the greatest heat of which never tired them, nor put them out of breath. In after times, when discipline grew slack, this luggage was thrown on carriages and porters' shoulders. The Macedonians were not less inured to hardship than the Romans; when Philip first formed an army, he forbad all use of carriages; yet, with all their load, they would march, in a summer's day, twenty miles, in military rank.

Baggage, in modern military affairs, denotes the clothes, tents, utensils of divers sorts, provisions, and other necessaries belonging to the army. Before a march, the waggons with the baggage, are marshalled according to the rank which the several regiments bear in the army; being sometimes ordered to follow the respective columns of the army, sometimes to follow the artillery, and sometimes form a column by themselves. The general's baggage marches first; and each waggon has a flag, showing the regiment to which it belongs.

BAGLAFECHTE, in ornithology, the name of Gmelin's loxia philippina, var, β, in Buffon's history of birds.

BAGLANA, or Bhagelana, a large district in the Mahratta territories, in the province of Aurungabad, situated principally betwixt the 20th and 21st degrees of north latitude. It is exceedingly mountainous, but contains many fertile plains; and its natural strength is augmented by a number of strong fortresses, erected on the summits of the mountains. The rivers are small, and the only towns of any note are Chandere, Tarabad, and Ingauw.

BAGLIVI (George, M. D.) an illustrious physician of Italy, born in Apulia, about 1668. He graduated at Padua, and afterwards went to Rome, where he was chosen professor of anatomy. His works were printed first in 1710, in 4to. The Praxis Medica, and De Fibra Matricis are his principal pieces. He wrote a Dissertation upon the Anatomy, Bite, and Effects of the Tarantula, and gave a particular account of the earthquake at Rome and the adjacent cities in 1703. His works are all in Latin.

BAGNA di Aqua, a town of Italy, in Tuscany. It is divided into the upper and lower towns, the former of which is called Petraja, and the latter Perlascio. It has long been celebrated for its warm baths, and is fifteen miles east of Leghorn.

BAGNAGAR, a town of Asia, in the dominions of the Great Mogul, once the capital of Golconda. Its suburbs were three miles long, and chiefly remarkable for a magnificent reservoir of water, 220 miles north-west of Fort St. George, and as many east of Goa.

BAGNAJA, a small town of the ecclesiastical states, one mile south of Viterbo, where is held yearly a great cattle market. The Dominicans have here a large monastery, with an elegant church.

BAGNALS, Punta De, a point on the north coast of the island of Barbadoes, between Indian river and the bay of Carlisle.

BAGNARA, a town of Naples, in Calabria Ultra, with the title of duchy, and 5000 inhabitants. It was destroyed by an earthquake in 1783, but has recovered from the calamity, and carries on a trade in wood, pitch, and excellent Muscadel wine. It is fourteen miles west of Oppido.

BAGNAREA, a town of Italy, in the states of the Church; the see of a bishop, and stands on a little hill. Five miles south of Orvieto, and twelve north of Viterbo. Long 12° 10′ E., lat. 42° 38′ N.

BAGNERES DE CAMPIN, or EN BIGORRE, a town of France, in Gascony; the capital of an arrondissement, in the department of the Upper Pyrenees. It contains about 6000 inhabitants, who are employed in tillage and pasturage. It is famed for its hot springs, of which there are no less than thirty-two; they were known in the time of the Romans. The accommodations for visitors are respectable. It is eleven miles south of Tarbes, and 450 S. S. W. of Paris.

BAG'NIO, *n. s.* *Bagno*, Ital. *balneum*, Lat. bath. A house for bathing, and other less innocent purposes.

> I have known two instances of malignant fevers produced by the hot air of a *bagnio*.
>
> *Arbuthnot on Air.*

> When I see a young profligate squandering his fortune in *bagnios*, or at a gaming-table, I cannot help looking on him as hastening his own death, and in a manner digging his own grave. *Connoiseur.*

BAGNIOS. The word is metaphorically applied to houses of bad fame. In Turkey it is become a general name for the prison where the slaves are enclosed, it being usual in those prisons to have baths.

BAGNOLS, a town of France, in Languedoc, the head of a canton in the department of the Gard, arrondissement of Usez. It stands on a rock, has a manufactory of various kinds of silk, and contains 4800 inhabitants. An expensive road has been cut through a hill, four miles in length, leading from this place to the Pont du Gard and Nismes. The sands of the neighbouring river Ceze yield gold occasionally. It is twenty-one miles east of Nismes.

BAGNOLENSES, or BAGNOLIANS, in church history, a sect of heretics, who in reality were Manichees, though they disguised their errors. They rejected the Old Testament and part of the New; held the world to be eternal; affirmed that God did not create the soul, when he infused it into the body; and denied his prescience.

BAGOAS, a Persian name for the king's eunuch, employed in history to denote Bagoas, an Egyptian, who governed for a long time under Artaxerxes Ochus. He poisoned his master, and then put to death Arses, whom he had set up as his successor, but was at length killed by Darius, against whose life he conspired. This eunuch answers to the Bagoas mentioned in Judith.—*Diodor.* l. 17; *Joseph. Antiq.* l. 11. c. 7. 2. A eunuch who was in great favor with Alexander the Great, &c.

BAGOI, among the ancient Persians, were the same with those called by the Latins spadones, viz. a species of eunuchs

BAGOLINO, a town of Venice, on
Caferro, which runs into the lake of Id
many iron-works, and contains 3600 in
Twenty-four miles north of Brescia.

BAGONES, a river of Brasil, in the
of Rio Janeiro. It runs S. S. E., and
sea near Cape Frio, in lat. 22° 5′ S.

BAGONGUENOU, two of the
islands, in the Indian ocean, and in th
of each other. Long. 71° 56′ E., lat.

BAGOPHANES, a governor of
who, when Alexander approached
strewed all the streets and burned incen
altars, &c. 2 *Curt.* 5. 1.

BAGOT (Lewis), an English prelat
Sir Walter Bagot, bart. and brother to
Lord Bagot, was born in 1740. He
cated at Westminster, and chosen thenc
of Christ Church, Oxford, took his d
A. M. and L.L.D. in 1764 and 1772;
canon of Christ Church in 1771, instal
in 1777; promoted to the see of Bristol
translated to Norwich the year follow
thence to St. Asaph in 1790, where he
1802. In this latter diocese he rebuilt
copal palace. He wrote, 1. A Defenc
scription to the Thirty-nine Articles,
required in the University of Oxfor
which was an anonymous answer to a
mous pamphlet, entitled Reflections
Impropriety and Inexpediency of Lay
tion in the University of Oxford. 2.
Discourses on the Prophecies, preach
Warburtonian lecture in Lincoln's-inn

BAG'PIPE, *n. s.* } From bag and
BAG'PIPER, *n. s.* } musical instrum
sisting of a leathern bag, which blows
foot-ball, by means of a port-vent or li
fixed to it, and stopped by a valve a
pipes or flutes; the first called the grea
drone, and the second the little one, w
the wind out only at the bottom; the th
reed, and is played on by compressing
under the arm, when full; and opening
ping the holes, which are eight, with th
The bagpipe takes in the compass
octaves.—*Chambers.*

> Wel coude he stelen corne and tollen thr
> And yet he had a thomb of gold parde,
> A white cote and a blew hode wered he
> A *baggepipe* wel coude he blow and soune,
> And therewithall be brought us out of toune

> No banners but shirts, with some bad ba
> stead of drum and fife.
>
> Yea, or the drone of a Lincolnshire ba
>
> S

> Some that will evermore peep thro' their
> And laugh like parrots, at a *bagpiper*.
>
> This light inspires and plays upon,
> The nose of saint-like *bagpipe* drone,
> And speaks through hollow empty so
> As through a trunk or whispering ho

BAGPIPE. The peculiarity of the
and from which it takes its name, is, th
which blows it, is collected into a leat
from whence it is pressed out by the
the pipes. These pipes consist of a

enor, or rather treble; and are different according to the species of the pipe. The bass part is alled the drone, and the tenor or treble part the hanter. Bagpipes are chiefly used in Scotland nd Ireland. In all the species, the bass never aries from its uniform note, and therefore very deservedly gets the name of drone; and the compass of the chanter is likewise very limited. There is a considerable difference between the Highland and Lowland bagpipe of Scotland; the former being blown with the mouth, and the latter with a small pair of bellows: though this differnce is not essential, every species of bagpipe being capable, by a proper construction of the reeds, of producing music either with the mouth or bellows.

The Highland Bagpipe consists of a chanter and two short drones, which sound in unison with the lowest note of the chanter, except one. This is exceedingly loud, and almost deafening, if played in a room; and is therefore mostly used in the fields, for marches, &c. It requires a prodigious blast to sound it; so that those unaccustomed to it cannot imagine how Highland pipers can continue to play for hours together, as they are often known to do. For the same reason, those who use the instrument are obliged either to stand on their feet, or walk when they play. The instrument has but nine notes; its scale, however, has not yet been reduced to a regular standard, by comparing it with that of other instruments. Those who are best acquainted with it, affirm that it plays only the natural notes, without being capable of variation by flats or sharps.

The Irish Bagpipe is the softest, and in some respects the most melodious of any, so that music books have been published with directions how to play on it. The chanter, like that of all the rest, has eight holes like the English flute, and is played on by opening and shutting the holes as occasion requires; the bass consists of two short drones, and a long one. The lowest note of the chanter is D on the German flute, being the open note on the counter string of a violin; the small drone (one of them commonly being stopped up) is tuned in unison with the note above this, and the large one to an octave below; so that great length is required in order to produce such a low note, on which account the drone has sometimes two or three turns. The instrument is tuned by lengthening or shortening the drone till it sounds the note desired.

The Scots Lowland Bagpipe is also a very loud instrument, though less so than the former. It is blown with bellows, and has a bass like the Irish pipe. This species is different from all the rest, as it cannot play the natural notes, but has F and C sharp. The lowest note of a good bagpipe of this kind is in unison with C sharp on the tenor of a violin, tuned concert pitch; and as it has but nine notes, the highest is D in alt. From this peculiar construction, the Highland and *Lowland* bagpipes play two species of music essentially different from one another, as each of them also is from every other species of music in the world. This kind of bagpipe was formerly very much used in Scotland at weddings and other festivals; being extremely well calculated for playing that peculiar species of Scots music called reels. But it has been often a matter of surprise how this was possible, as the instrument has only a compass of nine or ten notes at the utmost, which cannot be varied as in other instruments. In this respect, however, it has a very great compass, and will play an inconceivable variety of tunes. Its notes are naturally so high, there is scarce any one tune but what is transposed by it, so that what would be a flat note on the key proper for the violin, may be a sharp one on the bagpipe; and though the latter cannot play any flute note, it may in this manner play tunes which on other instruments would be flat.

The small Bagpipe has the chanter not exceeding eight inches in length; for which reason the holes are so near each other, that it is with difficulty they can be closed. It has only eight notes, the lower end of the chanter being commonly stopped. The reason of this is to prevent the slurring of all the notes, which is unavoidable in the other species; this, by having the lower hole closed, and also by the peculiar way in which the notes are expressed, plays all its tunes in the way called by the Italians staccato, and cannot slur at all. It has no species of music peculiar to itself; and can play nothing which cannot be much better done upon other instruments; though it is surprising what volubility some performers on this instrument will display, and how much they will overcome the natural disadvantages of it. Some of this species, instead of having drones like the others, have their bass parts, consisting of a winding cavity in a kind of short case, and are tuned by opening them to a certain degree, by means of sliding covers; from which contrivance they are called shuttle-pipes.

The bagpipe appears to have been an instrument of great antiquity in Ireland, though it is uncertain whence they derived it. Mr. Pennant, by means of an antique found at Richborough, in Kent, has determined that the bagpipe was introduced at a very early period into Britain; whence it is probable that both the Irish and Danes might borrow the instrument from the Caledonians. But that writer observes, 'We must still go further, and deprive even that ancient race of the credit; and derive its origin from the mild climate of Italy, perhaps from Greece. There is now in Rome a most beautiful bas relievo, a Grecian sculpture of the highest antiquity, of a bagpiper playing on his instrument, exactly like a modern Highlander. The Greeks had their *Ασκαυλης*, or instrument, composed of a pipe and blown-up skin; the Romans in all probability borrowed it from them, and introduced it among their swains, who still use it under the names of piva and cornu-musa. That master of music, Nero, used one; and had not the empire been so suddenly deprived of that great artist, he would (as he graciously declared his intention) have treated the people with a concert, and, among other curious instruments, would have introduced the utricularius, or bagpipe. Nero perished; but the figure of the instrument is preserved on one of his coins, highly improved by that great master: it has the bag and two of the vulgar pipes; but was blown with a bellows like an organ, and had on one side a row of nine unequal pipes, resembling the syrinx of the god Pan. The bagpipe, in the unimproved state, is also represented in an ancient sculpture; and appears to have had two long pipes or drones, and a single short pipe for the fingers. Tradition says, that the kind played on by the mouth was introduced by the Danes: as theirs was wind music, we will admit that they have made improvements, but more we cannot allow; they were skilled in the use of the trumpet; the Highlanders in the piohb, or bagpipe.'

Aristides Quintilianus informs us, that it prevailed in the Highlands in very early ages; and indeed the genius of the people seems to render the opinion highly probable. The attachment of that people to their music called pibrachs is almost incredible, and on some occasions is said to have produced effects little less marvellous than those ascribed to the ancient music. At the battle of Quebec, 1760, while the British troops were retreating in great disorder, the general complained to a field-officer in Frazer's regiment, of the bad behaviour of his corps. 'Sir (said he, with some warmth), you did very wrong in forbidding the pipers to play this morning: nothing encourages the Highlanders so much in the day of action. Nay, even now, they would be of use.'—'Let them blow like the devil, then (replies the general), if it will bring back the men.' The pipers were now ordered to play a favorite martial air; and the Highlanders, the moment they heard the music, returned and formed with alacrity in the rear. In the late war in India, Sir Eyre Coote, sensible of the attachment of the Highlanders to their favorite instrument, gave them £50 to buy a pair of bagpipes.

There was once a kind of college in the island of Sky, where the Highland bagpipe was taught; the teachers making use of pins stuck into the ground instead of musical notes. This, however, was for some time entirely dissolved, and the use of the Highland pipe became much less general than before. At last a society of gentlemen, thinking it perhaps impolitic to allow the ancient martial music of the country to decline, resolved to revive it by giving an annual prize to the best performers on the instrument. These competitions were held at Falkirk. The Lowland bagpipe was reformed, and the music improved by George Mackie, who is said to have attended the college of Sky seven years. He had before been the best performer on that instrument in that part of the country where he lived; but, while attending the college at Sky, adapted the graces of the Highland music to the Lowland pipe. Upon his return, he was heard with astonishment and admiration; but unluckily, was not able to commit his improvements to writing, and indeed the nature of the instrument scarcely admits of it.

BAGRE, in ichthyology, a small bearded fish, of the anguilliform kind, of which there are several species. It has no scales, but is covered over the whole body with a soft mucous skin of a silvery whiteness, and the beard, the head, and the fins are all of the same color; the eyes are large, the mouth small, and without teeth. It is caught in the American seas, and is eaten; but if any body is wounded by its thorns, it gives great pain, and is difficult to cure. In the Linnæan system it is classed as a species of silurus.

BAGRE DE RIO, a name by which some call the fish more frequently known by the name of nhamdia.

BAG-REEF, in maritime affairs, a fourth or lower reef, sometimes used in the royal navy.

BAGSHAW, a romantic little town in the High Peak of Derbyshire.

BAGSHOT, or BADSHOT, a small town in Surry, two miles and a half south-west from Staines, and twenty-six from London. This place is famous for its excellent mutton, brought hither from the Hampshire downs. It was formerly called Holy Hall, and our kings had anciently a house and park here. The church was rebuilt in 1676, having been destroyed by lightning. Bagshot-heath, which surrounds the town, is mostly uncultivated, but upon its borders are some handsome seats, and one is the residence of his royal highness the duke of Gloucester.

BA'GUETTE, *n. s.* Fr. a term of architecture. A little round moulding, less than an astragal; sometimes carved and enriched.

BAGUETTE DEVINATOIRE, the divining-rod, generally regarded as a piece of philosophical quackery. It is nothing else than a forked piece of hazle, the two branches of which are often from fifteen to eighteen inches in length, and form an angle of thirty or forty degrees. They are held in the hands in a certain manner, so that the trunk or middle is turned towards the heavens. Some persons, it is said, are endowed with such a property, that if they hold this rod as above described, it tends by a violent effort to turn its trunk downwards, when in the proximity of a spring, or of precious metals concealed in the bowels of the earth, or stolen money, &c. Nay, some have even asserted that it has pointed out, in this manner, the traces of criminals, robbers, or assassins. (See Hutton's Translation of Montucla's Ozanam, vol. iv. p. 260). A lady of rank, on reading his account of the divining-rod, wrote several letters to Dr. Hutton on the subject, describing the way in which she discovered that she possessed the faculty of finding water by such an instrument; and relating that she actually found water, by means of the hazle, in the duke of Manchester's park, at Kimbolton, Huntingdonshire, about thirty years ago. The same lady also exhibited successfully her method of discovering water, at Woolwich Common, to Dr. Hutton and his friends. See DIVINING ROD.

BAGYON, or BOGENDORF, a market town of Transylvania, in the county of Kolosch, not far from the Marosch, with churches of the Catholic, Reformed, and Unitarian creeds

BAHALATOHS, a small island in the eastern seas, near the east coast of Borneo. Long. 118° 21′ E., lat. 5° 45′ N.

BAHAMA, or LUCAYAS ISLANDS, the easternmost of the Antilles are situated in the Atlantic Ocean, to the south of Carolina, between 21° and 28° N. lat. and 71° and 81° W.

ong. They extend along the coast of Florida own to the isle of Cuba; are said to be 300, or, ccording to others, 500 in number, some of em only mere rocks; but twelve or fourteen of em are large and fertile, and differing but little om the soil of Carolina. Proceeding from the uthern to the northern extremity of the chain, e group may be thus enumerated:—

1. Turk's islands,
2. The Caucus, or Caicos,
3. The Heneagas,
4. Mayaguana,
5. Crooked island Group,
6. Long island,
7. Watlings,
8. The Exumas,
9. San Salvador,
10. Eleuthera, or Habour Island,
11. Providence,
12. Andros,
13. Lucayo, or Abaco,
14. Bahama.

In addition to the islands included in this roup, two extensive sand-banks, called the reat and little Bahama banks, occupy a wide pace of sea, the boundaries of which are indiated by a vast number of keys and islets. The opulation of the whole cluster is stated at 16,600. These islands were the first fruits of Columbus's iscoveries, and the feelings with which they nspired that great commander are expressed in the name of San Salvador, which he gave to the island on which he landed. It was called Guanahani by the natives, and was first seen on the 11th of October, 1492, being the earliest authenticated discovery of the western hemisphere. These islands are said to have been at this time inhabited by a peaceable race of Indians, whom the Spaniards transported to work in the mines of St. Domingo. They were not known to the English till 1667, when captain Seyle, being driven among them in his passage to Carolina, first gave his own name to one of them; but being a second time driven upon it, he gave it the name of Providence. The English government observing the advantageous situation of these islands, as a check on the French and Spaniards, attempted to settle in them in the reign of Charles II.; but they were little more than harbours for the buccaneers, until, in 1718, captain Woodes Rogers was sent out with a fleet to dislodge the pirates and make a settlement. A fort was now erected and an independent company stationed on the island. Ever since these islands have been slowly improving. In 1781 they were surrendered to the Spaniards, but restored to the British by treaty at the end of the war. At this period, also, many of the British loyalists and planters repaired to the Bahamas, chiefly from he southern states of North America; from hich period the principal islands have been reularly settled. In 1773 the number of whites as 2052, and the blacks about 2241. Previously May 1803 lands were granted by the crown, the whole of the Bahamas, to the amount of 5,381 acres, for the purpose of cultivation. t that time the population amounted to about ,318, including 11,395 blacks and people of lor, and it appears, by a return to the House of Commons in 1805, that the number of slaves imported for two years previously to the year 1803 amounted to 2523, of whom 2230 were exported, leaving only 293 for the use of the colony. The physical characteristics of the whole of this group are very similar: the surface of the whole is flat, the soil fertile, and the climate serene, but they are all thinly inhabited, and by persons who subsist chiefly by supplying necessaries to the crews of vessels driven on the coast. The thermometer generally varies from 80° to 90° during summer, and from 60° to 65° in winter; but the southern isles experience the influence of the trade-winds through the greater part of the year. The soil in a few places is rich: the chief cultivated product is cotton, besides which they yield mahogany and some kinds of dye woods, salt, turtle, and several species of fish. Cattle and sheep also thrive well, and great numbers of birds are met with, generally of the same kinds as those of the West India islands.

New Providence, being the seat of government, absorbs nearly the whole trade of the group, which is chiefly with England, the West Indies, and North America. Nassau is the principal town, and the seat of government for all the islands. This is founded upon that of the mother country, and resembles those of her other colonies in preserving the legislative, executive, and judicial powers distinct: the governor is the representative of the crown; and in him the executive power is vested. He is commander-in-chief of the military, convenes and prorogues the national assembly, and has power to annul their proceedings, subject to a reference to the king in council. By his judicial character he presides in all the courts. The council consists of twelve persons, appointed by the king, who form the upper house of the legislature, and participate with the governor in his judicial authority. The house of assembly consists of twenty-six members, who are elected by the respective districts. See Edwards's History of the West Indies; and M'Kinnen's Account of the Bahama islands.

Bahama, Great, Island of, one of the Bahama's, sixty-three miles long and about nine broad, situated on the south side of the Little Bahama bank, and extening from the Florida stream almost to the island of Abaco. The soil is fertile, the air serene, and the island well watered. It formerly produced guaiacum, sarsaparilla, and red wood; all which the Spaniards are said to have destroyed. This island is fifty-seven miles from the coast of east Florida. Long. 78° 10′ to 80° 24′ W., lat. 26° 40′ to 27° 5′ N.

Bahama Channel, the narrow sea between the coast of America and the Bahama islands, about forty-five leagues in length, and sixteen in breadth. It is sometimes called the Gulf of Florida. Here the current flows with that rapidity which renders the passage extremely dangerous, except under favorable circumstances.

Bahama Bank, Great, a sand-bank, extending nearly from the island of Cuba to the shores of the Bahama group. It commences about 22° 20′, and stretches to 26° 15′ of north latitude. A smaller bank of the same kind and name occupies a considerable space on the north of the island of Bahama.

BAHAR.

BAHAR, from the Sanscrit Vihar, a Buddish monastery, a large and populous province of Hindostan, formerly called Magadha, and once an independent kingdom. It lies between the twenty-second and twenty-seventh degrees of north latitude, is separated from the Nepaul dominions by an extensive range of hills, rising upon the northern frontier. On the east it has the province of Bengal, on the south the ancient Hindoo province of Gundwana, and on the west a part of the latter, Allahabad and Oude. It was anciently separated from the Benares territories by the river Caramnassa. This province at present is one of the most fertile and highly cultivated territories of Hindostan. Its included area of arable ground is computed at 26,000 square miles, and separated north and south into two equal divisions by the river Ganges, wich flows from west to east in a course of 200 miles.

The northern division stretches a distance of seventy miles from the forests of Nepaul and Morung to the borders of the above river. It is separated on the east from Purneah in Bengal by the Cósa or Cósi, and on the west from Goracpoor in Oude, by the Gunduck, and a crooked line between that river and the Dewah, or Goggrah. The whole included area is one unbroken plain, and was subdivided by the emperor Acber into four districts, namely, Hajypoor, Tirhoot, Sarun, and Chumparun, or Bettiah including four pergunnahs from Monghyr.

The central division extends from the Ganges south, as far as the Vindhya-chil range of hills, a distance of sixty miles. It is separated from Bengal on the east by a branch of the above southern hills, extending to the Tilliaghury pass, on the confines of Rajemal; from Chunar, in Allahabad on the west, by the river Charamnassa. The district Bahar, which lies in the centre of this division, occupies one half of the inclusive level area; the plains of Monghyr one sixth more, and the rest is mountainous. The district of Rotas lies to the south-west, chiefly between the rivers Soane and Caramnassa, and that of Shahabad stretches along the southern side of the Ganges. This central division is usually considered the most important and fertile of the whole province, abounding in opium, and yielding nearly two thirds of the whole produce.

Independent of the above divisions there is a straggling hilly country of 8000 square miles, which is almost barren, and still further to the south, a third elevated region of barren rugged land, to the extent of 18,000 square miles. This lofty territory, including the modern subdivisions of Chuta Nagpoor, Ramghur, and Palamow, is bounded on the west by the Soubah of Allahabad, on the south by Orissa, and on the east by Bengal. Amongst geographers it is termed the Three Bellads or Cantons, and is sometimes described under the appellation of Kokerah, but is more commonly called Nagpoor, from the supposed wealth of its diamond mines.

The extent of this province may easily perceived from the following table in squar miles:—

Assessed lands of eight districts . .	26,287
Hilly territories in Rhotas, Monghyr, &c.	7,133
Content of lands belonging to Palamour, Ramgheir and Nagpoor. .	18,553
Total content of the province. .	51,973

The following extract from the celebrated institutes of Acber, compiled by Abul Fazel, A.D 1582, may not be unacceptable to the geographical reader.

'The length of Bahar from Gurher to Rota is 120 coss, and the breadth from Terhoot the northern mountains includes 110 coss. is bounded on the east by Bengal, has All habad, and Oude to the west; and on the nor and south are large mountains. The princip rivers of this Soubah are the Ganges and t Soane. The river Gunduck comes from t north, and empties itself into the Ganges ne Hadjypoor. The summer months are here ve hot, but the winter is temperate. The rai continue for six months. In the district of Mo ghyr is raised a stone wall extending from th Ganges to the mountains, and this wall is con sidered to be the boundary between Bengal an Bahar. The Soubah contains seven districts viz. Bahar, Monghyr, Chumparum, Hajypoor Sarum, Tirhoot, and Rotas. These are sub divided into 199 pergunnahs. The gross amoun of the revenue is 55,47,985 sicca rupees. It furnishes 11,415 cavalry, 449,350 infantry, and 100 boats.'

The natural features of Bahar are by no means uninteresting. It possesses all the advantages of a rich soil, a temperate climate, and a centrical geographical situation, shaded by mountains and watered by rivers and small streams. Of these the Ganges, the Soane, the Gunduck, the Dummoodah, Caramnassa, and the Dewah are the most remarkable.

In Bahar and the contiguous districts a parching wind from the westward prevails during a portion of the hot season, and blows with great strength during the day, but at night it is succeeded by a cool breeze in the opposite direction. Both occasionally cease for days, and even weeks together, giving way to easterly gales; and during the cold season a blighting frost frequently occurs in both the provinces of Bahar and Benares.

Agriculture, manufactures, and commerce have always flourished in this province, owing perhaps in a great measure to its natural advantages. The chief productions are opium, saltpetre, grain, sugar, betel-leaf, indigo, oils, essences, &c. together with fine timber for boat-building. Cotton cloths, for exportation, are manufactured all over the districts, and the hills are supposed to contain coal, sulphur, iron and other metals. The numerous productions of Bahar, together with its internal, means of communication serving as a thoroughfare for the commerce of Bengal and foreign maritime countries with the province of Hindostan, raised this territory into a state of prosperity, soon after the Patan conquest, and this continued under the Mogul dynasty. Opium may be considered as the staple commodity of the province, although saltpetre is a great article of exportation. The latter is produced in considerable quantities, in the districts of Hajypoor and Sarun, where it is manufactured for exportation. The production of this article is always greatest during the prevalence of the hot winds, which are perhaps essential to its formation. These winds did not formerly extend their influence beyond the eastern confines of Bahar; but by the change of seasons which have been remarked within the last thirty years, they have reached to Bengal Proper, where it is now said saltpetre might be manufactured with nearly the same success as in Bahar. The opium that is produced in this and the neighbouring provinces is monopolized by government, and sold in Calcutta by public sale. The common produce is eight pound of opium for every beegah, which measures about one-third of an acre, besides which the cultivator reaps about fourteen pounds of seed. The preparation of the raw opium is under the immediate superintendance of the company's agent, and is as follows: The watery particles are first evaporated by the sun, and replaced by oil of poppy-seed to prevent the drying of the resin; after which the opium is formed into cakes, covered with the petals of the poppy, and when sufficiently dried is packed up in chests with the fragments of the capsules, from which the poppy-seeds have been thrashed out. The opium is frequently adulterated by intermixing an extract obtained from the stalk and leaves of the poppy, and sometimes the gum of the mimosa; but the adulteration is difficult of discovery.

Bahar was, in common with the greater part of Hindostan, anciently supplied with salt from the lake of Sambher, in the province of Ajmeer; but its supplies of that article are now brought from Bengal and Coromandel, and imported under the protection of government.

Although an intimate connexion has always existed between this province and Bengal, and their histories have been blended, there are, in the nature of landed property, several important distinctions; of which the following are worthy of notice. In Bengal the zemindaries are very extensive, but in Bahar they are comparatively small; hence the Bengalese zemindars assume a degree of power and influence which those of Bahar are not able to maintain. Those of the latter also from their comparative distance having been placed under a provincial administration, have been precluded from that information which the zemindars of Bengal have derived from their access to the offices of government. Though the lands of Bahar have been let to farm, from time immemorial, yet no general settlement had been concluded between government and the proprietors of the soil from the acquisition of the Dewanny until the final and perpetual assessment in 1792; from which circumstance the cultivator was placed under great disadvantages. There are, at present, few instances of jaghires in Bengal; but in Bahar they are common. The custom of dividing the produce of the land in certain proportions between the cultivator and the government was almost universal in Bahar, but in Bengal it was very partial and limited; so that compared with those of the latter province, the land-proprietors of Bahar, generally speaking, were in a degraded condition. There are now in this province three principal zemindars, viz. the rajahs of Tirhoot, Shahabad, and Sunnote Tekaroy; and it has been observed, that the permanent fixing of the revenue system, which was supposed to be fraught with so much mischief, has not been found so injurious in practice as it appeared in theory: the actual cultivators of the earth being now in a much better condition than they were before the adoption of that measure.

It appears from the geographical chapters of the Puranas, the only documents of their ancient geography which the Hindoos possess, that Bahar was originally the seat of two independent sovereignties, viz. that of Magadha or south Bahar, and that of Mithila (Tirhoot) or north Bahar. Different dialects were anciently used, and even now prevail, in those countries; namely, that of Mithila, or Tirhoot, which both in the terms and form of its character has considerable affinity to the Bengalé; and that of Magadha, in which the resemblance to that language is still more characteristic and striking.

Of the general population of the province, at least one-fourth are Mahommedans; Bahar having been conquered by that people at an early period, and afterwards retained in subjection; so that the Brahmins have acquired an unusual degree of influence. Gaya, the birth-place of the great prophet and legislator Buddha, is a place of pilgrimage, and the central resort of sectaries of that persuasion; but among the resident inhabitants few Buddhists are to be found, owing to the intolerance and cruelty of the Brahmins, together with the Mahommedans' mode of propagating and confirming their faith.

The chief towns are Patna, Monghyr, Buxa, Rotas, Gayah, Dinapoor, and Boglipoor. The revenue is considerable, amounting in 1815 to 6,701,538 rupees, or nearly £837,944 sterling. The inhabitants visibly improve, and appear to be of a different race from the Bengalese, whom they excel both in strength and stature.

The province of Bahar is at present divided into the following districts; which, with their natural features and local peculiarities, we shall subjoin for the satisfaction of the reader.

1. Boglipoor, south-east of Bahar, and comprehending a part of the Mogul province of Bengal, is bounded on the north by Tirhoot and Púrinijah, on the east by the latter and Murshid-ábád; on the south by Birb'hum and Rámgarih, and on the west by that district and Bahar. It extends 133 miles one way, and eighty the other, forming a total area of about 8225 square miles, and, according to Ayeen Akberry, ii. 25. 197 was known anciently by the name of the sercar of Mongér. The hills are imperfectly cultivated. The winds shift twice a year, blowing almost

invariably from east to west, between the months of June and February; after which they change from west to east. The heats are frequently oppressive, and the cold season comparatively mild. The soil is in many places rich, and fit for agriculture; but in others, rocky and barren. Hot springs are frequently found in this district; in some of which, particularly at B'hinebaud, the thermometer rises to 144° Fahrenheit. The general character of the population is respectable, but the mountaineers are wild and uncivilised: some of them have been lately brought, under the guidance of the Brahmins, who teach them, to worship Durgà before a bíl-tree.

The most remarkable places in the district are as follow: B'hágal-pùr, the capital, situated in lat. 25° 13′ N., long. 86° 58′ E.; 110 miles north-west of Murshid-ábàd. It is a mean-looking town, in the midst of a beautiful country; and contains a population of more than 30,000 inhabitants, chiefly Mahommedans. Champánager, in lat. 25° 14′ N., long. 65° 55′ E., three miles west of B'hágal-pùr, contains, together with Lacshmí-gani, a population of 9000. A Mahommedan saint, nine cubits high, is said to have been buried here, whoſe tomb is still a place of pilgrimage. G'hidd'hór, or Ghiddhore, lat. 24° 52′ N., long. 86° 10′ S. S. W. of Mongér, is remarkable for the ruins of a castle, said to have been built by the Affghan Shir Sháh, A. D. 1544; the massive walls of which are still remaining.

Mong'er, Monghyr, (Mudga or Mucti-giri), in lat. 25° 23′ N. long. 86° 26′ W., on the south bank of the Ganges. Its fort, surrounded by a deep ditch, has been a place of note from remote antiquity. The town is formed by the assemblage of sixteen distinct hamlets, provided with only two regular streets, which lie near the eastern and southern gates of the fort. The population is about 30,000. Its most remarkable curiosity, the shrine of Pér Sháh Koseìn Lohaunì, is most venerated, both by Mussulmans and Hindùs. About five miles distant from the above town is the celebrated hot spring called Sítàcúnd, or the pool of Sità; in oriental mythology, the wife of Ráma the Indian Bacchus. The waters are received into a brick cistern, about eighteen feet square, from which air-bubbles are constantly emitted, although the nature of the gas has not been ascertained. The heat of this spring is different at different times, varying from 92° to 132° of Fahrenheit's thermometer.

Múti j'harnà, or Mootyjerna (the pearl dropping stream) lies about eight miles inland from the Ganges; is a remarkable cascade, formed by two fine waterfalls, together measuring 105 feet perpendicular. The waters sweeping over the summit of the rocks, and falling from that lofty altitude, are received into a basin below, which has been conjectured, not upon slight grounds, to be the original crater of an extinct volcano. A view of this magnificent cascade is given in Hodges's Travels in India. Cohl-gáng, (spelt gánò, and pronounced gánùg), a small town, in lat. 25° 14′ N., long. 87° 15′ E., on a peaked hill, ten common cós south-east of Boglipoor. Teliy'agar'hi, or Telliaghurry, is a small town twenty-three miles north-west of Rájàmahal; lat. 25° 15′ N., long. 87° 37′ E. It is remarkable for an old castle, built by the Sultan Shujáâ, in the seventeenth century. The Vind'hya hills here, come down close to the river, and form the line of boundary between the provinces of Bahar and Bengal, in the Mogul division.

2. Bahar is a large district lying in the centre, the boundaries of which are ill defined, but generally traced to the Ganges, on the north, to Ramgur and Monghyr on the south, to the latter, with the river Soane on the east, and the district of Rotas on the west; including a territory of 6680 square miles. The level land is highly cultivated, but interspersed with naked and barren hills, which are entirely isolated. Some of these rise in clusters, exhibiting a rugged irregular appearance, of which the most remarkable are, the Beráber pahàr, west of the Phalgù; the Rajà-grïha, or Raj-mahal, hills on its eastern side; and a long narrow range contiguous to Shaikh púrah. The southern hills form a part of the Vind'hyan chain, continues with little or no interruption for a great extent and, in the opinion of some, even to Cape Comorin. These hills no where approach the river, and the country, though generally lofty exhibits the immense stretch of one continued plain. The winds commonly blow east and west, shifting twice in the year. The soil is highly fertile, and the climate warm; producing not only the comforts, but even luxuries of life. The rivers and streams which water the country are numerous. The Ganges rolls along its magnificent stream to the width of an English mile. The Sonar, almost equal in the width of its channel, is navigable in the rainy season, and is celebrated for its handsome pebbles and fine fish. The Phalgú, held in religious veneration by the Hindùs, is tremendously deep and rapid, and is formed by the union of two immense torrents above the city Gayà, where it spreads to the breadth of 500 yards. The Punpun, Muraha, Dard'ha, Sacri, and Panchane, are all rivers of considerable importance. The population of this district is overflowing. In 1811 it amounted to 2,755,150 souls, and the increase has been almost incredible. The revenue in 1814 was equal to 1,748,006 rupees, or £218,500 sterling. In point of religion, Mahommedanism is widely extended, although idolatry is the most prevalent. There are six great Hindoo shrines, visited by pilgrims, and two belonging to the Jaín in the division of Nawada.

The principal towns of this district are, Patnà, (in Sanscrit, Padmarati, the lotus-bearing) the capital of the province of Bahar, in lat. 25° 37′ N. long. 85° 15′ E., on the south side of the Ganges, which is here five miles wide in the rainy season. Including the suburbs, it covers an area of twenty square miles, and contains 312,000 population. The public buildings are paltry, the fortifications are in ruins; and even the handsomest mosque is now let as a warehouse. Patnà is a place of considerable trade. It has a court of appeal and circuit; a judge and magistrate; collector, commercial-resident, and opium agent; is garrisoned by a provincial battalion, but has few European houses or inhabitants. Patnà lies 400 miles from Calcutta, by Murshed-ábàd.

Danâ-pùr, in lat. 25° 37′ N. long. 85° 5′ E., ten miles west of Patnà, is one of the principal stations of the European troops, and, accordingly, has magnificent barracks, good roads, elegant villas, and is, in short, compared with Patnà, a perfect paradise. Its population is between 20,000 and 30,000.

Gayà, in lat. 24° 49′ N., long. 85° E., is the capital of the district of Bahar, and consists of 1. Gayà Proper, the residence of the Brahmins; and 2. Sahibganj, the residence of the remaining inhabitants, both containing a population of nearly 40,000. This place is celebrated by the Budd'hists as the birth-place of their great legislator, and by the Hindoos as the scene of one of Vishnu's victories over an unmanageable asur or giant. Pilgrims without number crowd from all parts, and their amount is rapidly increasing; since from 31,000 who visited it in 1811, 200,000 at present are said to arrive annually. These pious visitants are taxed by the British government according to the number of holy places they visit. The utmost sum is 14½ rupees, or £1 12*s* sterling. We have only to add, that the crimes arising from so great an influx of strangers, too evidently shows the deplorable tendency of the Hindoo superstition. The ruins of Budd'ha-gayà, and the number of images scattered round them for fifteen or twenty miles, are astonishing, and render it probable that this was once the centre of Budd'hism, and the residence of some powerful monarch professing that faith.

3. The third district of the province, viz. Tirhoot, or Tirhút, is on the north-west of the province, bounded on the south by the Ganges, on the west by Saren, or Sarun district, on the north by the Saptari woods of Népal, and on the east by Púrnéyah in Bengal. The district is high, healthy, and well-watered, producing, besides the commodities above-mentioned, turmeric, ginger, and several other valuable articles. Its chief rivers are the Gaud'achi, B'hagmati, and Gagari. The whole area in 1784, before the alteration, was upwards of 5000 square miles; the revenue, as late as 1814, amounted to 1,274,717 rupees, or £159,339 sterling; and the population in 1801 was 2,000,000. It was anciently a part of the province, or rather kingdom, of Mit'hilà, which comprehended the greater part of the three districts, Tirhút, Púriniga, Sáren, together with part of the Nepalese territory; and was bounded by the Gandac, Cósa, and Ganges, together with the mountains of Nepal on the north. It was subdued by the Moguls in the fourteenth century, and became part of the British empire in 1765. This district has been recently selected by government for improving the breed of horses, the soil and climate appearing favorable to that purpose; accordingly many of the first quality are reared in the Zilát, or division of Hajì-púr.

The most remarkable mountain feature is the towering peak of D'hólà-giri in the Himaláya chain, near which the Gaud'achi, or Sálagrámi river, suposed to be the Condochates of Arrian, takes its rise in lat. 29° 30′ N., and long. 83° 45′ E., or nearly. The summit of this mountain was calculated by Mr. Colebroke to reach nearly 27,000 feet above the level of the sea. *As. Res.* xii 276. In its bed are found schistose stones, or salgráms, containing remains of the cornu ammonis, which are thence dispersed, are objects of adoration all over India. From which circumstance the mountain is called Sálgrámi in Népál. The spiral lines are supposed to be traces of Vishnu, and some of these stones sell for 2000 rupees, or £225. sterling.

Within the limits of Tirhút, or Tirhoot, is the town Hajypoor, or Hájì-púr, with a district of the same name, including an area of 2782 square miles, whence the company obtain most of their saltpetre. The town lies nearly opposite Patnà, at the confluence of the Ganges and Gaud'achi rivers, in lat. 25° 41′ N., and long. 85° 21′ E. It is celebrated for its horse-fair, held every November, to which, in 1807, no fewer than 6000 horses were brought, two of which sold for 4000 rupees, or £450 each. Durb'haugà, in lat. 26° 9′ N., long. 86° 20′ E., was a considerable place in the time of Acbar; and near Sing'hiá, east of the Gaud'achi, lat. 25° 52′ N., long. 85° 15′, are some very curious ruins.

4. The fourth district is Saren (the Asylum), comprehending Bettiá or Champáran, formerly a separate district, and is bounded on the north by Macwan-pûr and Gónac'h-pur, on the south by the Ganges, on the west by the Déwa or G'hara river, and on the east by Tirhoot, including, in 1784, an area of 5106 square miles. The whole of Saren suffered extremely from the famine in 1770, by which nearly half the inhabitants perished; but is in general a well cultivated and highly fertile country, and greatly improved since the decennial settlement by Lord Cornwallis. There are only two Mahommedan zemindars in the whole district, and the revenue, in 1814, was 1,233,385 rupees, or £138,756. The population is considerable, amounting, in 1801, to 1,200,000, of whom one tenth were Mahommedans.

Teryáni, or Turyáuì (the country of boats) lies at the foot of the northern hills and the lower lands, where the rivers become navigable. The base of the mountains is covered with wood, and the intervening lands between it and the cultivated districts are covered with grass, intersected by streams and rivers, which in the rainy season are navigable. The confined air, stagnant water, and putrified vegetable matter, in this district render the climate unwholesome in the wet months, especially in the low-lands. The forests are inhabited by elephants, bears, tigers, rhinoceroses, wild boars, jackals, foxes, hares, and hog-deer. The palás (erythrina monosperma) and simul (bombax heptaphyllum) are found on the Nepalese confines. Of this district Chaprah is the capital, lying in lat. 25° 46′ N., long. 84° 46′ E., and extending nearly a mile along the northern bank of the Ganges. The population of this town, in 1817, amounted to 43,700, and is now greatly increased. The Patnà bearers of Calcutta, or the original C'harwa tribe, are settled near the borders of this town, although they emigrated originally from Chóta Nag-púr, lying in the southern part of the province.

5. Shah-abad (the royal residence), is an extremely fertile and populous district, bounded on the north by the Ganges, on the east and south by the Sôn, and on the west by Chunàr,

in the province of Allah-ábàd; and including, in 1784, an area of 1869 square miles, since which it has been materially augmented. The population is about 2,000,000, and the revenue, in 1814, amounted to 1,177,462 rupees, or £132,465 sterling.

Arrah, the capital of this district, lat. 25° 35′ S., and long. 84° 40′, is extensive and populous. Bagsar, or Bacsar, south of the Ganges, in lat. 25° 35′ N., long. 83° 57′ E., is the place of the celebrated engagement in 1764, when sir Hector Munro, with 6215 Sipákís and 856 Europeans, defeated the combined armies of Shujáû'd daulah and Kásim Alí Khán, amounting to 40,000 men. Here also is a police station, at which all travellers are obliged to exhibit their passports. Sasram, Sesráùng, Sahasram, or Sahasráúng, lying in lat. 24° 58′ N., long. 83° 58′ E., is celebrated for the splendid mausoleum of Shir Khán the Afghàn, built in the midst of a great reservoir or tank, upwards of a mile in circumference. Rohtas is the chief town of the westerly pargauah of this district, bounded by the Caramnásà, which joins the Ganges at Bacsar, and contained, in 1784, as many as 3680 square miles. The fortress Rohtás gar'h, on the level summit of a mountain, in lat. 24° 38′ N. and long. 83° 50′ E., was thought impregnable till taken from Rájàh Chintámen in 1542, by Shír Sháh, the celebrated Afghàn. After this it was again surprised, and in 1764, when Kásim Ali evacuated the province, came into possession of the English.

6. **Ram-g'har** (the house of Rama), the sixth division of the province, is a hilly and mountainous district in the south, bounded on the north by Bahár proper, on the east by Bardáhwán and B'hál-pur, on the west by Bilaunja, Seraúja and Jeshpúr, and by that district, Gang- and Sing'h-b'húm on the south. A great part of this district belonged to the ancient province of Góndwána; but now, in addition to its own peculiar territory, it comprehends Palamò, Pachét, and Chúta Nág-púr. The population has been estimated at half a million, who, though improving, are at present uncivilised. The woods, wild beasts, and savage inhabitants, render this district a perilous residence; whilst superstition, rapine, and murder, are to be seen in all directions. The extent of the Rám-g'har territories in 1784 was 21,732 square miles, of which two-thirds was waste land. Iron is found in many of the hills. The Máhwap tree, or Bassia longifolia, grows abundantly among the rocks, and furnishes a farinaceous pulp which is a substitute for bread, and a nutricious infusion which is used as tea. The chief rivers are Barácar and Damódar; and the largest towns are Macaud-gauj, Chitra, and Rámgar'h. Rámgar'h, on the Damódar, is now a second-rate town, in lat. 23° 39′ N., long. 95° 43′ E. Palamò, or Palamau, the residence of a powerful rajah, is a hilly and woody territory on the Mahratta frontier. Berwa, in lat. 53° 20′ N., long. 84° 46′ E., lies contiguous to Nazárì Bágh, the head quarters of the corps stationed in Ramgar'h. Pachét, a zemíndárì of uncivilised population, contains 2779 square miles. The town is in lat. 23° 36′ N., and long. 86° 50′ E. Ch'hóta Nág-púr is a high, woody, and unhealthy zemíndárí, at the southern extremity of this province, bordered on three sides by Góndwána, and never completely subdued by the Mahommedans. The Chataum, Cieri, and D'hangar tribes, have never embraced the religion of the Brahmins; but have a religion and language of their own. The productions are similar to those found in the other parts of the district. Iron is commonly met with, but is not manufactured, because that metal can be procured at a smaller expense from the European markets.

For a further illustration of the general features and economy of this province we refer the reader to Hamilton's Hindostan; Asiatic Researches; Bernouilli's Hindostan, i. and ii.; Rennell's Memoir; Ayeen Akberry, &c.

Bahar, a town in the province of Bahar, district of Bahar, 35 miles S. E. from Patna. Lat. 25° 13′ N., long. 85° 37′ E.

Bahar, or **Barre**, in commerce, weights used in several places in the East Indies. They have been distinguished as the great bahar, with which they weigh pepper, cloves, nutmegs, ginger, &c. and the little bahar, with which they weigh quicksilver, vermillion, ivory, silk, &c. But this weight varies much in different parts of the East. The bahar of Acheen, in Sumatra, consists of 100 cattees, and is equal to 490lbs. avoirdupois. The bahar of Betlefackee, in Arabia, consisting of forty farcels, is = 815¼lbs. avoirdupois. The bahar of Bencoolen = 560 lbs. avoirdupois. The bahar of Junkseylon of eight capins = 485lbs. 5oz. 5½dr. The bahar of Molacca, of three peculs = 405lbs. avoirdupois. The bahar of Mocha, of fifteen franks = 445lbs. avoirdupois.

BAHAREN, or **Bahhrein**, a cluster of islands in the Persian Gulf, chiefly remarkable for the pearl fishery of the neighbourhood. They have often changed masters. With Ormus they came under the dominion of the Portuguese, were again restored to Persia by Thomas Khouli Khan; and after his death, the confusion into which his empire was thrown, gave an opportunity to an enterprising and ambitious Arab of taking possession of them. But he was soon compelled to relinquish them once more to the Persians; who have lately been, in their turn, driven from them by the rising sect of the Wahabees. Baharen, or Awal the principal island, was famous for its pearl fishery even when pearls were found at Ormus, Kareke, Kashy, and other places in the Persian Gulf: but became of much greater consequence when the other banks were exhausted. It lies about fifteen miles from the coast, and ninety W. N. W. of Bushire; and is covered with villages and date gardens. The capital, Medina, containing 800 or 900 houses, and a strong fort, which was some time ago garrisoned by 300 Persians. The town is destitute of water; but here is a harbour which will admit vessels of 200 tons burden, and a strong castle lies about three miles from the coast. The ersians are said to resort hither habitually for e study of Arabic, under the Shuats, the disples of Ali. Another of these islands is Arad, vided by an isthmus into two parts, the princil of which is called Samoki, and has a small wn, Mahared. A third island, sometimes noced in the Eastern maps, is Gutter Sahari, lled by the English, Meritan Rock. The rliest time of fishing is in April, and the latest October. The pearls taken at Baharen, ough not so white as those of Ceylon or Japan, e much larger than those of the former place, d more regularly shaped than those of the tter. They have a yellowish color; but have lso this good quality, that they preserve their olden hue, whereas the whiter kind lose much f their lustre by keeping, especially in hot ountries. Those of deeper color are generally bought by the Mahrattas, and the paler are transported through Bassora and Bagdad all over Asia. It is said to be on the whole the richest and most productive pearl fishery in the world; and to average a profit to the individuals who farm it of £100,000 per annum. The oyster banks, lying fifteen or twenty feet below the surface, stretch from about 25° to 26° 40′ N. lat., and the shells from two to ten inches in diameter, are considered valuable, as well as the pearls. It is a practice with those who are employed in opening the shells, to put the finer pearls into their mouths, believing that this adds to their brilliancy; and the fishermen always anticipate success after copious rains. Latterly the produce of the fishery has in some measure declined, in consequence of the English markets for the Ceylon fishery being transferred to the straits of Manaar; and the pearls are chiefly sent to Surat.

BAHARY, a town of Sennaar, fifteen miles south-east of that place.

BAHAS, a town of Arabia, in the kingdom of Yemen, near the Red Sea, sixteen miles N.N.W. of Loheia. Lat. 15° 59′ N.

BAHATRICALLY, a town of Cochin, with a pagoda, twenty-three miles S. S. E. of Cochin.

BAHBEIT, BALBEIT, or BHABEIT, a ruined place in the Delta of Egypt, where there are the remains of a magnificent marble temple. Pococke supposes it to have been a temple of Isis; but this is disputed by D'Anville and Savary. The figures on the basso relievo are beautiful, but ill drawn. Pococke supposes Bahbeit to be the ancient Busiris. Seven miles S. S. W. of Mansora.

BAHBELGONGE, a town of Hindostan, in the country of Baglana, situated on the river odavery, sixty miles east of Nassuck, sixty-five west of Aurungabad. Long. 74° 52′ E., lat. 19° 43′ N.

BAHHREIN, or AB'DU'L BAHREIN (the Land of the two Seas), is the name of a province of Arabia, between Omàn and Basrah. It is called also Hajar and Lahsà, or El-Ahsà. This district is bounded by the Arabian desert on the north; by Nejed on the west; by the sea on the east; and by Omàn on the south. It appears to be in a flourishing condition; and is governed by the Arabs of the tribe of Benì Khálid. The principal towns are on the coast, viz. 1. Lahsà, or Hajar, the residence of the sheik, or head of the tribe. 2. Katif, a sea-port, about twenty miles from the islands of Al Bahreïn. It is inhabited by people employed in the pearl-fishery. 3. Coweït, or Koreïn (Græn), sixty or seventy miles from Zobeïrch, Old Básrah. It is populous, and maintained, like other places on this coast, by the pearl-fishery.

BAHIA DE TODOS LOS SANTOS, a province and captainship of Brasil, extending to a considerable distance along the coast; being bounded on the north by the St. Francisco, which runs into the sea in lat. 11° S., and on the south by the province of Minas Geraes, including the district of Ilheos, forming a separate province. The climate is always warm, but is refreshed by the sea-breeze. The soil is peculiar, and those parts between the mountains and the sea are esteemed the best in Brasil for the growth of the sugar-cane. It is also well adapted for tobacco and cotton. Coffee is grown in great quantities, but the quality is inferior.

BAHIA, or ST. SALVADOR, the capital of the above province, is populous and opulent; and the second city in Brasil. It is strong by nature and well fortified; and was, for two centuries, the residence of the governor-general of Brasil. It is still an archiepiscopal city; and, including its suburbs, is about four miles long. The upper town is situated upon an eminence, and the lower, which consists principally of a single street, parallel to the beach, at its western base. Here is the chief seat of its commerce, a dock-yard, and a marine arsenal. The streets of the upper town are so steep that carriages can rarely be used. The churches, chapels, and convents, of Bahia are splendid structures; and with the archbishop's palace, the mint, and the governor's residence, are the first and most conspicuous objects that meet the eye of a stranger. The grand church, formerly belonging to the jesuits, is by far the most supurb structure in this city. It is entirely composed of European marble, imported at an immense expense. The wood-work of the altar is inlaid with tortoise-shell, and covered with paintings, gilding, and a profusion of ornaments. The chief commerce of Bahia is in linen, and other kinds of cloth, hats, silk and thread, stockings, grain, rice, flour, biscuit, wine, oil, slaves, butter, cheese, bacon, and household furniture; for which gold, sugar, tobacco, skins, hides, Brasil wood, balsam, and several kinds of drugs, are exported. The population, including the suburbs, has been lately estimated at 100,000, about 30,000 of whom are whites, and the rest mulattoes and negroes. It stands in 12° 59′ S. lat., and longitude 37° 23′ W.

BAHIA, a province of the island of Luzon, one of the Philippine islands, so called from a lake in the neighbourhood, which is said to be ninety miles in circumference.

BAHIA DE CHETUMEL, or Hanover Bay, a bay on the east coast of the peninsula of Yutucan, in the bay of Honduras.

BAHIA, HONDA, a large, well sheltered harbour of the island of Cuba, on the north side, which has fifteen and ten fathoms of water in the bay, eight at the entrance into the harbour, and anchorage in four and five fathoms. Long. 83° 6′ W., lat. 22° 58′ N.

BAHIE, or BAHEI, an island on the coast of Arabia, in the Red Sea. Also a small town opposite to it on the shore.

BAHIOUDA, an extensive desert district to the north of Sennaar, between that country and Dongola.

BAHIR, a Hebrew term, signifying famous or illustrious, but particularly applied to a book of the Jews, the most ancient of the Rabbinical works, and which treats of the profound mysteries of the Cabbala.

BAHIRA, BAHRI, or RIF, or the maritime province, a name given by the Arabian geographers to the Delta of Egypt, and the districts immediately adjoining it east and west. It contains Alexandria, Rosetta, Damietta, Menuf, and Mansoura.

BAHIRA, among the ancient Arabs, a name given to one of the four kinds of camels or sheep, which, according to their religion, were turned out at liberty with an ear mark, no longer to be used for service like other cattle. The bahira, with the sabahi, wasita, and hami, were abolished by Mahomet.

BAHLINGEN, a large and well built village in the grand duchy of Baden, circle of the Treisam, upper bailiwic of Hochberg. It contains 1620 inhabitants, who cultivate the vine to a great extent.

BAHN, a town of the Prussian states, in Further Pomerania, and circle of Greifenhagen. It contains about 1300 inhabitants, who derive their subsistence chiefly from tillage, the neighbouring country being very fertile; straw hats are also manufactured here. Twenty miles S.S.W. of Stargard, thirty-two north of Custrin.

BAHOOAN, a small island in the Sooloo archipelago. Long. 120° 58′ E., lat. 6° 9′ N.

BAHOUACHE, DIAN, the title of the sove reign of Anossi. See ANOSSI.

BAHRABAD, a town of Persia, in the province of Khorassan, ten miles north of Sebsvar.

BAHR BELAME, or river without water, a deep valley in the west of Egypt, supposed to have anciently formed a canal of communication between Lake Mœris (Faioum), and the Lake Mareotis. See BARRAI.

BAHRDT (Charles Frederick), a German writer, born at Bischofswerda, in 1741. He studied at Leipsic, where his father was professor of divinity, took the degree of A.M., and was appointed his father's deputy. In consequence of an amour he was obliged to leave Leipsic; and settled at Erfurt, as professor of Biblical antiquities. Here in 1769 he published An Essay towards a system of the Doctrines contained in the Bible, in which several heterodox opinions were broached. He soon after left Erfurt, and went to Giessen in Hesse, where he published a number of theological tracts, abounding with extravagancies, confidently maintained. From Giessen he removed to Durkheim, in 1774, and here count Von Leiningen Dachsburg appointed him his preacher, and gave him a house for a seminary of education, designated the Philanthropium, which was opened in 1777. To obtain pupils, Bahrdt travelled to Holland and England; but on his return, finding a prosecution had been commenced against him at Vienna, he fled to Prussia. Some time after he settled at Halle, where he became an avowed deist, and commenced tavern-keeper, and farmer. At Halle he instituted a new society of free-masons, on account of which he lay twelve months in prison, but afterwards continued his business as a landlord. He died in 1792.

BAHR EL ABIAD, or the White River, a name given to the real Nile, near its first origin; the sources of which in the African Alps of Kumri remain to be explored.

BAHR EL AZREK, Blue River, or Abyssinian Nile, has its chief spring in a small hillock, situated in a marsh, and joins the Bahr el Abiad, or true Nile, about lat. 16° N.

BAHR EL ACCABA, an arm of the upper extremity of the Red Sea, penetrating into Arabia.

BAHR EL SOWDA, a name said to be given to the lake of Antioch.

BAHRY, a town of Hindostan, in the dominions of the rajah of Dhoulpore, 10 miles north of the river Chumbul.

BAHURIM, a city of the Benjamites, about a mile or two north-east of Jerusalem. Ahimaaz and Jonathan hid themselves in a well in this town, when pursued by Absalom's messengers.

BAJA, or BAIÆ, an ancient village of Campania, in Italy, between the promontory of Misenum and Puteoli, on the Sinus Baianus; famous for its natural hot-baths, which served the wealthier Romans for the purposes of medicine and pleasure. The variety of these baths, the softness of its climate, and the beauty of its landscape, captivated the minds of opulent nobles, whose passion for bathing was unbounded. The wearing of linen, and the disuse of ointments, render the practice less necessary in modern life; but the ancients performed no exercise, and engaged in no study, without previous ablutions, which at Rome required an enormous expense in aqueducts, stoves, and attendants: a place, therefore, where waters naturally heated to every degree of warmth bubbled spontaneously out of the ground, in the pleasantest of all situations, was such a treasure, as could not be overlooked. Baiæ possessed these in the highest perfection; its easy communication with Rome was also a point of great weight. Hither at first retired for a temporary relaxation the mighty rulers of the world, to string anew their nerves and revive their spirits, fatigued with bloody campaigns and civil contests. Their habitations were small and modest; but soon increasing luxury added palace to palace, till ground was wanting for the vast demand; enterprising architects, supported by immense wealth, now, therefore, carried their foundations into the sea, and drove that element back from its ancient limits. It has since taken ample revenge, and recovered much more than it ever lost. From being a place of resort for a season, Baiæ grew up to a permanent city: whoever found himself disqualified by age, or infirmity for sustaining any longer an active part on the political theatre, or from an indolent disposition sought a place where the pleasures of a town were combined with the sweets of a rural life: whoever wished to withdraw from the dangerous

rhood of a court, or the baneful eye of
, flocked thither, to enjoy life untainted
and trouble. The affluence of wealthy
ts rendered Baiæ, therefore, as much a
of art as it was before of nature: its
may be inferred from its innumerable
aps of marbles, mosaics, stucco, and
cious fragments of taste. It flourished
ory down to the days of Theodoric, the
ut the destruction of its enchanted pa-
owed quickly upon the irruption of the
conquerors, who sacked and burnt all
em, and destroyed or dispersed the
ce of Roman nobility. Moles and but-
ere now torn asunder and washed away;
ries, with the proud towers that once
their brows, undermined and tumbled
into the deep, where, many feet below
ce, pavements of streets, foundations of
nd masses of walls are still to be de-
Internal commotions of the earth contri-
so largely to this general devastation:
hitic vapors and stagnated waters have
this favorite seat of health into the
pestilence, at least during the estival
Yet Baiæ in its ruined state, and stripped
ornaments, presents many beautiful and
subjects for the pencil. It lies in the
Lavoro, twelve miles west of Naples,
from Puzzuolo. Don Pedro, the vice-
harles V. erected a castle on a neigh-
eminence to defend the harbour; and
century ago, another was built on an
djacent, which communicates to the
a bridge.

Baia, Bayjah, or Begia, a town of
lom of Tunis in Africa, supposed to be
nt Vacca of Sallust, and Oppidum Vag-
Pliny. The Tunisians say that if there
e kingdom such another town as this for
corn, it would become as cheap as sand.
reat annual fair, to which the most dis-
ian tribes resort with their families and
Notwithstanding this, the inhabitants
poor, and great part of the land about
remains uncultivated. The town stands
clivity of a hill, on the road to Constan-
ut ten leagues from the northern coast,
ty-six south-west of Tunis. On the
art is a citadel that commands the place,
f no great strength. The walls were
t of the ruins of the ancient Vacca, and
e ancient inscriptions.

or Baya, a populous market town of
, on the Danube, thirty-five miles north-
Esseck. It has a Catholic and Greek
urch.

in entomology, a species of phalæna,
of the middle size, that inhabits Europe.
n the deadly night shade.

DE Rama, a town of European Turkey,
hia, district of Mehedinza, situated on
of the same name.

BAD, a town of Asiatic Turkey, in Na-
nty-eight miles south-east of Kastamoni.

, a town of Asiatic Turkey, in Na-
ty miles south-east of Kutayeh.

D, in zoology, a species of silurus.

DOR, Cape, a cape on the west coast of the island of Luzon, being its extremity Long. 120° 40′ E., lat. 18° 40′ N.

BAJADOUR, in old records, a carrier or porter.

BAJANA, in conchology, a species of venus found on the shores of Brasil.

BAIANUS Lacus, a lake, or bay, mentioned by Tacitus, which some suppose to be the lake Lucrinus, and others the bay of Baiæ.

Baianus Sinus, or Baiarum Portus, a bay of Naples, so called from Baiæ, which was enlarged by Augustus, by giving entrance to the sea into the Lacus Lucrinus and Averni. He ordered it to be called Portus Julius apud Baias. The modern name is Golfo di Pozzuolo. See Pozzuolo.

BAJAPOUR, a town of Baglana, Hindostan, on the river Godavery, twenty miles east of Bahbelgong.

BAIAS, or Balæ, a town of Syria, at the north-east extremity of the bay of Alexandretta, supposed to be the ancient Issus. On the hills fronting it, are the ruins of a triumphal arch, or of some other structure of gray marble. It is sixteen miles from Alexandretta, and the fine gardens round the town supply Aleppo with oranges and lemons. In a small bay, to the north of the town, are seen the ruins of an ancient port, which is now much exposed to the south-west winds, which are very dangerous here. On the south side there is a mountain torrent, the bed of which is conjectured to have been the boundary between Syria and Cilicia.

BAJAZET I. emperor of the Turks, succeeded Amurath I., A. D. 1373. He was a renowned warrior, but a tyrant. In the beginning of his reign he was very successful. In 1393 he had conquered all Thrace, Macedonia, Thessaly, and the greater part of Mysia and Bulgaria; and in 1396 he brought an army of 300,000 men against Emanuel II. emperor of Constantinople, whom he defeated, and slew 20,000 of the Christians, but not without considerable loss on his own side. But in 1397 Tamerlane, or Timour Beg, the celebrated prince of the Tartars, brought an army against him of 400,000 horse and 600,000 foot; and having overcome him in a pitched battle, wherein 200,000 Turks were slain, took Bajazet himself prisoner, and exposed him, it has been said, in an iron cage, the fate he had destined for his adversary, if he had been the victor. This story, however, has been rejected as a fable by many modern writers. Mr. Gibbon has given the following narrative of this memorable transaction: 'No sooner was Timour informed that the captive Ottoman was at the door of his tent, than he graciously stepped forward to receive him, seated him by his side, and mingled with just reproaches a soothing pity for his rank and misfortunes. 'Alas!' said the emperor, 'the decree of fate is now accomplished by your own fault: it is the web which you have woven; the thorns of the tree which yourself have planted. I wished to spare, and even to assist, the champion of Moslems: you braved our threats, you despised our friendship; you forced us to enter your kingdom with our invincible armies. Behold the event. Had you vanquished, I am not ignorant of the fate which you reserved for myself and my troops. But I disdain to retaliate: your life and honor are secured; and I shall express my gratitude to God by my clemency to man.' The royal captive showed some signs of repentance, accepted the humiliation of a robe of honor, and embraced with tears his son Mousa, who, at his request, was sought and found among the captives of the field. The Ottoman princes were lodged in a splendid pavilion; and the respect of the guards could be surpassed only by their vigilance. On the arrival of the haram from Boursa, Timour restored the queen Despina and daughter to their father and husband; but he piously required that the Servian princes who had hitherto been indulged in the profession of Christianity, should embrace without delay the religion of the prophet. In the feast of victory, to which Bajazet was invited, the Mogul emperor placed a crown on his head and a sceptre in his hand, with a solemn assurance of restoring him with an increase of glory to the throne of his ancestors. But the effect of this promise was disappointed by the sultan's untimely death: he died of apoplexy at Akshehr, the Antioch of Pisidia, about nine months after his defeat. The victor dropped a tear over his grave. His body, with royal pomp, was conveyed to the mausoleum which he had erected at Boursa; and his son Mousa, after receiving a rich present of gold and jewels, of horses and arms, was invested, by a patent in red ink, with the kingdom of Anatolia. Such (continues the historian) is the portrait of a generous conqueror, which has been extracted from his own memorials, and dedicated to his son and grandson nineteen years after his decease; and at a time when the truth was remembered by thousands: a manifest falsehood would have implied a satire on his real conduct. On the other hand, of the harsh and ignominious treatment of Bajazet there is also a variety of evidence. The Turkish annals, in particular, which have been consulted or transcribed by Leunclavius, Pococke, and Cantemir, unanimously deplore the captivity of the iron cage; and some credit may be allowed to national historians who cannot stigmatise the Tartar without uncovering the shame of their king and country.'

BAJAZET II. emperor of the Turks, the youngest son of Mahomet II. who took Constantinople, succeeded his father, A. D. 1480. Like him too he was a great conqueror. In 1484, he laid waste Wallachia: in 1486, he subdued the Getæ: in 1491, he took Epidamnum in Sclavonia: in 1493, he defeated the Christians in Croatia, in an obstinate and bloody battle, wherein he lost 10,000 of his own troops: in 1498, he over-ran Russia and Dalmatia, with 70,000 men; and, in 1500, he took Modon, in the Morea, from the Venetians. He died in 1512.

BAICHA, two rivers of Siberia, flowing into the Turuchan, thirty-two and fifty-six miles north-west of Turuchansk.

BAIDEAH, a valley in the great road from Cairo to Suez, at the northern extremity of which Suez stands.

BAIDHA, a town of Arabia, in the province of Hedjas, thirty miles north-west of Vadilkova.

BAIDYNATH, a small town of Hindosta in the Kemâon hills, celebrated for an ancie temple, dedicated to the Hindoo god of med cine, and much frequented by pilgrims.

BAIEU, in zoology, the name of the cervi Mexicanus, or Mexican stag, in Bancrof Guiana, &c.

BA'IGNE, *v. a.* *Bagner*, Fr. To drench; soak: a word out of use.

> The women forslow not to *baigne* them, unless th plead their heels, with a worse perfume than Jugur found in the dungeon. *Carew's Survey of Cornw*

BAJITH, a city of Moab, mentioned in Isai xv. 2. whither the king went to bewail the sta of his nation, and supplicate aid from his idols

BAIKAL, a large lake of Siberia, lying b tween 52° and 55° lat. N. It is reckoned to b 550 versts, or 318 German miles in length; bu only about thirty versts broad, and in some places not above fifteen. It is environed on all sides by high mountains. In one part of it, which lies near the mouth of the river Barguzin, it throws up an inflammable sulphurous liquid called naptha, which the people of the adjacent country burn in their lamps. There are likewise several sulphureous springs near this lake. Its water at a distance appears of a sea-green color: it is fresh; and so clear that objects may be seen in it several fathoms deep. It does not begin to freeze till near the end of December, and thaws again about the beginning of May; from which time till September, a ship is seldom known to be wrecked on it; but by the high winds which then blow, many shipwrecks happen. The fishery on the shores begin in May; and the southern shore is divided into districts, and farmed out by the government. This lake is called by the Russians Swatoie More, or the Holy Lake; and Dalai Nor by the Tartars. When it is frozen over, people travel upon it in the road to China; camels have for this purpose a particular kind of shoes, sharp at the bottom, and the oxen have sharp irons driven through their hoofs, without which it would be impossible for them to pass. The shores and islands, consisting of granite rocks, called the Yablonian and Tunkinski chain, running from east to south-west, are well wooded, and form, by their frequent projections into the lake, bays and promontories, but with little good anchorage. The high road from Irkutsk to Kiakhta, passes along its southern shores. On the western shore copper has been found. Its depth, where greatest, is from eighty to 490 fathoms, but in some places it is unfathomable, and so variable that it has been conjectured with great probability to have arisen from a deep rent in the mountains, occasioned by an earthquake. Under the waters of this lake, grows a peculiar species of sponge, called by the Russians morskaya or sea-sponge, the spongia baicalensis of Pallas It is used for giving the first polish to metals The common seal (phoca vitulina) seldom found in fresh water, or at a distance from the ocean is taken here in April, basking on the ice, and the sale of their skins is a source of considerable profit. It yields a sort of blubber, so rank that even ravens will not touch its carcase; yet its oil is highly esteemed and purchased by the Ch nese. The baikalensis, a species of callionymus that inhabits the deep parts of the lake, is about nine inches long, soft, slender, and rather compressed; and has ventral fins; of carp, tench, sturgeon, devil's lampreys, (salmo oxyrrynchus), lenki (salmo salvelinus), there is abundance; the most important fish is the omul, or migratory salmon, somewhat resembling the herring. They are taken in October, and being dried by the frost, can be conveyed fresh almost to any distance. The climate around this lake is extremely severe; in the midst of summer frosty nights being common; and snow, as early as August, falling on the neighbouring mountains. The vegetable productions are principally the pinus cembra, empetrum nigrum, and pyrola uniflora, the silky knotgrass (polygonum sericeum), a beautiful plant, and the triticum litorale, which the peasants call dikaya koch, wild barley. Rivers flowing into the lake Baikal are, on the north side, in lat. 55° 51′ the Upper Angara, on the east the Barguzin, in latitude 54°. At its mouth is the Cape, called the Holy Promontory; and on the west, the Tunga, Selenga, and Buguldeika, the last of which discharges itself by three mouths. The only outlet is the Lower, or Greater, Angara, which rushes from the lake, in lat. 50° 54′ N. and long. 105° E. with great impetuosity, and joins the Yenisei near Ust Tungurskoyé in north lat. 58°. The channel through which it quits the lake is more than a mile broad.

BAIKALITE, in mineralogy, a variety of pyroxene, found near the lake Baikal in Siberia. See PYROXENE.

BAIKALENSIS. See BAIKAL.

BAIL', *n. s.* & *v. a.* }
BAIL'ABLE, *adj.* }
Of this word the etymologists give many derivations; it seems to come from the French *bailler*, to put into the hand; to deliver up, as a man delivers himself up in surety. '*Bail* is the freeing or setting at liberty one arrested or imprisoned upon action either civil or criminal, under security taken for his appearance. There is both common and special *bail*; *common bail* is in actions of small prejudice, or slight proof, called common, because any sureties in that case are taken; whereas, upon causes of greater weight, or apparent speciality, *special bail* or surety must be taken. There is a difference between *bail* and mainprise; for he that is mainprised is at large, until the day of his appearance: but where a man is *bailed*, he is always accounted by the law to be in their ward and custody for the time; and they may, if they will, keep him in ward, or in prison at that time, or otherwise at their will.'—*Cowell.* A bail is therefore a surety or bondsman; one who gives surety for another. Bailable relates to the less atrocious offences, where security for the appearance of the offender may be legally offered and accepted. To give or to admit to bail, is to render or to accept the security which the law prescribes in a bailable case. In Spenser the word is figuratively used to signify power or jurisdiction.

So did Diana, and her maydens all,
Use silly Faunas now within their *baile*. *Spenser.*

Let me be their *bail.*——
They shall be ready at your highness' will,
To answer these suspicions.——
Thou shalt not *bail* them. *Shakspeare.*

They are not *bailable*,
They stand committed without *bail* or mainprize.
B. Jonson.

Worry'd with debts, and past all hopes of *bail*,
The unpity'd wretch lies rotting in a jail.
Roscommon.

And bribe with presents, or, when presents fail,
They send their prostituted wives for *bail*.
Dryden.

BAIL, is originally derived from the Greek, *βαλλειν*, to deliver, and so called because by means of it, the party restrained is delivered into the hands of those that bind themselves for his forthcoming, in order to a safe keeping or protection from prison; and the end of the bail is to satisfy the condemnation and costs, or render the defendant to prison. The commitment of a person being only for safe custody, wherever bail will answer the same intention, it ought to be taken; as in most of the inferior crimes: but in felonies, and other offences of a capital nature, no bail can be a security equivalent to the actual custody of the person. For what is there that a man may not be induced to forfeit, to save his own life? or what satisfaction or indemnity is it to the public, to seize the effects of him who has bailed a murderer, if the murderer himself be suffered to escape with impunity? Upon a similar principle, the Athenian magistrates, when they took a solemn oath never to keep a citizen in bonds that could give three sureties of the same quality with himself, did it with an exception to such as had embezzled the public money, or had been guilty of treasonable practices.

Bail may be taken either in court, or, in some particular cases, by the sheriff or other magistrate; but most usually by the justices of the peace. To refuse or delay to bail any person bailable, is an offence against the liberty of the subject, in any magistrate, by the common law; as well as by the statute Westm. 1. 3 Edward I, c. 15, and the habeas corpus act, 31. Car. II. c. 2. And, lest the intention of the law should be frustrated by the justices requiring bail to a greater amount than the nature of the case demands, it is expressly declared by statute 1. W. and M. st. 2. c. 1. that excessive bail ought not to be required; though what bail shall be called excessive, must be left to the courts, on considering the circumstances of the case, to determine. And on the other hand, if the magistrate takes insufficient bail, he is liable to be fined, if the criminal does not appear.

In civil cases, every defendant is bailable But it is otherwise in criminal matters. Regularly, all offences either against the common law or act of parliament, that are below felony, the offender ought to be admitted to bail, unless it be prohibited by some special act of parliament. By the ancient common law, before and since the Conquest, all felonies were bailable, till murder was excepted by statute: so that persons might be then admitted to bail almost in every case. But the statute W. 1. 3 Ed. I. c. 15, takes away the power of bailing in treason, and in divers instances of felony. The statutes 23 Hen. VI. c. 9.

and 1 & 2 Ph. & Mar. c. 13. gave farther regulations in this matter: and upon the whole we may collect, that no justices of the peace can bail, 1. Upon an accusation of treason: nor, 2. Of murder: nor, 3. In case of manslaughter, if the prisoner be clearly the slayer, and not barely suspected to be so; or if any indictment be found against him: nor, 4. Such as, being committed for felony, have broken prison; because it not only carries a presumption of guilt, but is also superadding one felony to another: 5. Persons outlawed; 6. Such as have abjured the realm: 7. Persons taken with the mainour, or in the act of felony: 8. Persons charged with arson: 9. Excommunicated persons, taken by writ de excommunicato capiendo: all which are clearly not admissible to bail by the justices. Others are of a dubious nature, as, 10. Thieves openly defamed and known: 11. Persons charged with other felonies, or manifest and enormous offences, not being of good fame: and, 12. Accessaries to felony, that labor under the same want of reputation. These seem to be in the discretion of the justices, whether bailable or not. The last class are such as must be bailed upon offering sufficient surety; as, 13. Persons of good fame, charged with a bare suspicion of manslaughter, or other infamous homicide; 14. Such persons being charged with petit larceny or any felony, not before specified: or, 15. With being accessary to any felony. Lastly, it is agreed, that the court of king's bench (or any judge thereof in time of vacation) may bail for any crime whatsoever, be it treason, murder, or any other offence, according to the circumstances of the case. And herein the wisdom of the law is very manifest. To allow bail to be taken commonly for such enormous crimes, would greatly tend to elude the public justice; and yet there are cases, though they rarely happen, in which it would be hard and unjust to confine a man in prison, though accused even of the greatest offence. The law has therefore provided one court, and only one, which has a discretionary power of bailing in any case; excepting only even to this high jurisdiction, and of course to all inferior ones, such persons as are committed by either house of parliament, so long as the session lasts; or such as are committed for contempts by any of the king's superior courts of justice.

In civil processes, in which an actual arrest and imprisonment is not now allowed, such as suits for the recovery of sums of less amount than £15, or of damages, the precise amount of which cannot be shown before the jury shall have estimated them (as in actions of trespass, or for any injuries, either personal or pecuniary, but to an unascertained amount), no arrest can be made, and, consequently, no bail need be demanded. But inasmuch as the writ, which now forms the commencement of all civil actions, was formerly a process issued against a defendant, who had neglected to comply with certain anterior summonses, and who was thereby liable to imprisonment, in order to secure his appearance in court on the day whereon the sheriff was to make his return of the writ, as having by his previous contempt of legal authority, shown himself not to be trusted at large; it was a consequence that he could not avoid imprisonment, but by giving bail. An as by the tenor of the writ, and by fiction law, a defendant in all cases is now held to in the same circumstances, it is necessary that should put in common bail: which is a me formal entering of the names of two fictitio persons, John Doe and Richard Roe, as h sureties.

In actions for a sum certain, if the plainti make affidavit that that sum is fifteen pound or upwards, the defendant must give what, tec nically, in distinction from the fictitious bail which we have just spoken, is called special bai that is, in order to avoid imprisonment, he mu find two real and responsible persons to sureties for him. As soon as an arrest has bee effected, these sureties give a bond to the sherif for the defendant's appearance on the day of th return of the writ, and this is called bail to th sheriff, or bail below. On that day, or withi four, or in some cases, six or eight days afte they enter into recognizances, that if judgment given against the defendant, he shall pay the damages and costs, or surrender his person. This is called giving bail above, or bail to the action. If the plaintiff requires it, they must justify, as it is termed, or perfect the bail; that is, they must swear (if in London or Middlesex, before a judge; or, in the country, before commissioners appointed for that purpose), that they have the requisite qualifications: which are, the being housekeepers, and worth, each of them, the full sum for which they become bail, after payment of all their debts. Thus securing the plaintiff the person or property of his defendant, if the latter is insufficient to discharge the claim, the bail are entitled to apprehend him by warrant, or in any other way, to surrender his person.

When a defendant has failed to put in bail above, and the sheriff is unable to produce his body, that officer is answerable to the plaintiff for the sum for which the bail below was given: and he has his own remedy against the bail, by action upon their bond. But, as a simpler plan, the sheriff usually assigns the bond to the plaintiff, and he proceeds upon it. It is, however, optional with the plaintiff to accept or refuse the assignment.

Bail-Bond, an obligation entered into by one or more sureties, upon giving bail, insuring the defendant's appearance at the time appointed by the court.

BAILEMENT. See Bailment.

BAILEY (Nathan), an English lexicographer, who kept a school at Stepney, where he died June 27, 1742. He published Dictionarum Domesticum, or a Household Dictionary, 8vo; The Antiquities of London and Westminster, 12mo; and several school books: but his principal work was an Etymological English Dictionary, which first appeared in octavo, and being enlarged into a folio, volume became the basis of Dr. Johnson's dictionary.

BAILIE, in Scots law, a judge anciently appointed by the king over such lands, not erected into a regality, as happened to fall to the crown by forfeiture or otherwise: now abolished. It is still the title of one or more magistrates in royal boroughs, and of the judge appointed by a baro

cted into a barony. There are four
town council of Edinburgh, three in
ow, Aberdeen, Perth, &c.

, *n. s.* } Borrowed from the Fr.
, *n. s.* } *baillie*. In our old voca-
. } bularies written baily, and
l is still called in many places.
person who sustains the office;
the place of his jurisdiction; and
ffice or jurisdiction itself.

arly corporation affords the state a
ailiffs yearly. *B. Jonson.*

ALLIVUS, from the French word
f, that is, præfectus provinciæ: and
so the office itself was answerable
nce, before the revolution; where
ght parliaments, which were high
whence there lay no appeal; and
ecincts of the several parts of that
ich belonged to each parliament,
veral provinces to which justice was
by certain officers called bailiffs.—
here are several counties in which
en administered to the inhabitants,
now called sheriff or viscount (one
es descended from the Saxons, the
Normans); and though the sheriff
bailiff, yet it is probable that was
s, because the county is often called
d in Magna Charta, cap. 28. and
. the word bailiff seems to comprise
and bailiffs of hundreds. As the
ded into counties, so every county
o hundreds; within which, in an-
e people had justice administered
e officers of every hundred. But
ed courts, except certain franchises,
l in the county courts; and the bai-
nd office is grown into contempt,
nerally officers to serve writs, &c.
berties. In other respects, however,
ll in esteem: for the chief magis-
s towns are called bailiffs, or bai-
metimes the persons, to whom the
are committed, are termed bailiffs,
of Dover Castle, &c. Of the ordi-
here are several sorts.

ERRANT, or BAILIFFS ITINERANT,
m the sheriff appoints to go up and
untry to serve writs and warrants,
ounty courts, sessions, assizes, &c.
ing answerable for the misdemeanor
fs, they are usually bound in an
r the due execution of their office,
lled bound bailiffs, which is vul-
d into a much more homely appel-

r BOROUGHS, were magistrates an-
es and towns, answering, in some
what, in later times were called
yor, &c. Canterbury was a bailiff
s before it was made a mayor town.
Southwark, Scarborough, &c. are
by bailiffs.

r FORESTS and MANORS, direct
ll trees, gather rents, pay quit-

F FRANCE, under the monarchy,
d over the provinces originally be-
crown.

BAILIFFS OF FRANCHISES, or BAILIFFS OF LIBERTIES, in England, are those bailiffs who are appointed by every lord within his liberty, to execute process and do such offices therein as the bailiff errant doth at large in the county.

BAILIFFS OF THE EMPIRE, were anciently vicars or regents of the empire; as appears from a letter of Henry of Flanders to pope Innocent III. wherein he says, the princes, barons, and knights have elected me ballivum imperii.

BAILIFFS, PROVINCIAL, among the French, under the old despotism, were officers appointed in certain provinces or counties, with an authority somewhat like that of justices of assize, instituted by the dukes and counts in their several territories, after they had procured the inheritance of them. These acted in the name, and by the authority, not of the king as justiciaries, but of the dukes or counts who appointed them, and whose deputies they were.

BAILIFFS, ROYAL, in France, were appointed by the king over provinces annexed to the crown.

BAILIFFS, SHERIFF'S, in England, or sheriff's officers, are either, 1. bailiffs of hundreds, or 2. special bailiffs, and appointed over their respective districts, to collect fines; summon juries; attend the judges and justices at the assizes and quarter sessions; and to execute writs and processes in the several hundreds.

BAILIFFS, WATER, officers appointed in all port-towns, for the searching of ships, gathering the toll for anchorage, &c. and arresting persons for debt, &c. on the water.

BAILII (David), painter of perspective views and portraits, the son of Peter Bailii, an artist of some note, was born at Leyden in 1584. Having acquired the rudiments of the art under his father, he improved under Verburg, and still more under Vandervoort, with whom he spent above six years. While with him, he copied a perspective view of the inside of a church, by Stenwyck, with such accuracy, that even Stenwyck himself could scarcely determine which was the original. He travelled through several parts of Italy to see the works of masters, and for a few years resided at Rome. The correctness of his drawing, and the delicate finishing of his pictures, have been much admired. He died in 1638.

BAILIWIC, BAILYWICK, or BAYLIWICK, balliva, in law, the jurisdiction of a bailiff over that liberty which is exempted from the sheriff of the county. Stat. 27th Eliz., ch. 12. Wood's Just. 206.

BAILLET (Adrian), a very learned French writer and critic, born in 1649, at Neuville near Beauvais. His parents being poor, he obtained his education by favor of the bishop of Beauvais who afterwards presented him with a small vicarage. In 1680 he was appointed librarian to M. de Lamoignon, advocate general to the parliament of Paris, of whose library he made a copious index, in thirty-five volumes folio. He died in 1706. His principal works are, A History of Holland, from 1609, to the peace of Nimiguen in 1679, 4 vols. 12mo. Lives of the Saints, 3 vols. folio, which he professed to have purged from fables. Jugemens des Savans, 9 vols. 12mo. and the Life of Des Cartes, 2 vols. 4to. which he also abridged to 1 vol. 12mo.

BAILLEUL, a town of France, in the department of the North, formerly very strong. It has been several times burnt by accident. It lies nine miles S.W. of Ypres.

BAILLIAGE, the office of a bailiff, or the place where he keeps his seat, and the territory subject to his jurisdiction; which last is also denominated Bailiwic.

BAILLIAGE, Water, an ancient duty received by the city of London, upon all goods and merchandises brought in or carried out of port.

BAILLIE (Robert), M. A. a presbyterian divine of Scotland, was born at Glasgow in 1599, and studied at that city; having received orders from Abp. Law, in 1622 he was chosen regent of philosophy at Glasgow, and some time after was presented to the church of Kilwinning, by the earl of Eglinton. In 1633, he declined the offer of a church at Edinburgh, but in 1638 was chosen a member of the famous assembly at Glasgow, which was a prelude to the civil war, and was a member of all the succeeding assemblies, excepting those which sat while he was at Westminster. In 1640 he was sent to London by the Covenanting Lords, to draw up an accusation against Apb. Laud. In 1642 he was appointed joint professor of Divinity in the University of Glasgow, with Mr. Dickson; which he preferred to similar offers from the other three universities. In 1643 he was one of the commissioners to the celebrated assembly of Divines at Westminster, and returned in 1646. When after the execution of Charles I. his son was proclaimed in Scotland, he was appointed by the assembly to wait on Charles II. at the Hague, and after the restoration was made principal of the university of Glasgow. He died in 1662, aged sixty-three.

BAILLIE (Matthew), M. D. a celebrated anatomist. He was the son of the Rev. James Baillie, professor of divinity at Glasgow, by the sister of Dr. William Hunter. He studied at Glasgow and Baliol College, Oxford, and afterwards became the pupil of his uncle. Being made physician to St. George's hospital, he succeeded Dr. Hunter as lecturer on anatomy, in conjunction with Mr. Cruickshank. He continued a public lecturer till 1799. Dr. Baillie was one of the physicians in ordinary to Geo. III. and Geo. IV. and long stood in the first rank among his medical contemporaries. He published The Morbid Anatomy of the most important parts of the Human Body, 8vo. 1793, subsequently enlarged and improved; a Series of Engravings tending to illustrate Morbid Anatomy; also a Description of Gravid Uterus; and contributed many important papers to the Philosophical Transactions and medical collections of his day. Dr. Baillie formed a valuable museum of anatomical specimens which he presented to the College of Physicians. He died in 1823, in the sixty-third year of his age; leaving by his wife, daughter of Dr. Denman, a son and a daughter.

BAILLIEBOROUGH, a town of Ireland, in the county of Cavan, forty-three miles from Dublin.

BAILLONE, in heraldry, a charge in coats of arms, representing a lion rampant, holding a staff in his mouth.

BAILLY (John Sylvian), a celebrated philosopher and astronomer, born at Paris in 1763 His family had been respectable as painters for several generations, and he had commenced his studies in the same profession; but he was too much bent on the pursuit of literature, to apply himself successfully. His early acquaintance with La Caille the celebrated geometrican, determined the science which was in future to engross his attention. The calculation of the comet which appeared in 1759, was his first labor. In 1763 he became a member of the Academy of Sciences; and in the course of the same year, published a reduction of La Caille's observations on the zodiacal stars in 1760 and 1761. He was next employed in considering the theory of Jupiter's satellites; and in 1766 published the results of his investigation, with the history of that part of astronomy. In 1771 he gave the world a very valuable memoir on the light of the satellites, marking their eclipses in a very precise and accurate manner. The genius of Bailly was not confined to abstract science, or profound physical speculations; it was equally brilliant in those departments of literature where the nicest discrimination of character and the most powerful eloquence is requisite. His eulogies upon Charles V. Corneille, Leibnitz, Moliere, Cook, La Caille, and Gresset, raised universal admiration. In 1775, he published at Paris the first volume of the History of Ancient Astronomy; and in 1778 the second. TheHistory of Ancient Astronomy, from the foundation of the Alexandrian school to the present age, followed in 1779. He next published Letters on, the origin of the Sciences, and of the people of Asia; to which he added a series of Letters on the Atlantis of Plato and the ancient History of Asia; which he addressed to Voltaire. He was also very intimate with Buffon, till he opposed the election of the Abbé Maury into the French academy; to which Bailly had been chosen secretary in 1784. This year he was named one of the commission to investigate the nature of the animal magnetism of Mesmer, practised by Deslon. His report, which was presented to the Academy of Sciences, and has been since translated into English, contains the most satisfactory and decisive evidence upon the subject. It is highly valuable in developing the physical effects produced by moral causes. In 1785 he was admitted into the Academy of Inscriptions and Belles Lettres; and thus was at the same time a member of all the three academies of Paris, which none had been since Fontenelle. We must now leave the peaceable haunts of philosophy, and follow Bailly to the revolutionary stage, on which he acted a principal part. Here, though we behold him struggling with opposite interests in the midst of a lawless mob; zealous for freedom, and contending in its cause with enthusiasm, we hear not a charge of selfish motives, or want of integrity, brought against him by any party; yet he fell a sacrifice to that violence which nothing could control. In 1789 he was appointed deputy to the Tiers Etat, and was soon after elected president; a station which he held when the national assembly was constituted, and when the king issued his proclamation for dispersing

1. In the contest between the popular
mblies and the court, Bailly was zealous to
tain the rights of the people; and the fa-
s oath to the members of the Tiers Etat,
esist tyrants and tyranny, and never to se-
te till they should obtain a free constitu-
was dictated by him. Next day, the 14th
ly, memorable for the taking of the Bastile,
as chosen mayor of Paris; and though in
high office he greatly promoted the different
sures by which the popular party became
rious over the court, yet he is allowed to
discharged the arduous duties of it, at this
g juncture, with integrity, moderation, and
ness. The public mind was now, however,
me like the ocean in a tempest: a people
fond of novelty, free from the fetters of des-
sm, with enthusiastic and erroneous ideas of
ty, were every day more eager for a change,
could suffer no restraint. The disposition
e people to anarchy was evident, and Bailly,
anxious that the laws should be respected,
gined that, by the vigorous execution of
n, tranquillity might be maintained. Depu-
from the military insurgents at Nancy were
sted by his orders, and he firmly opposed
rat and Hubert in their proceedings. He
red into a society more select than that of
Jacobins' club; and used every argument
t the king and the royal family might be al-
ed to go to St. Cloud. Thus he lost the
fidence of the people; and being called by
national assembly to dismiss the tumultuous
ting, demanding the abolition of monarchy,
the 17th July, 1791, he ordered the soldiers
fire, which rendered him completely obnoxious
them. In the end of the same year, when the
nstituent assembly was dissolved, he therefore
igned his office, and retired to his philosophical
dies. Yet a bloody proscription reached him;
an enemy to the republic he was seized, impri-
ed, arraigned before a savage tribunal, summa-
y condemned, and executed in the fifty-seventh
ar of his age. He bore his sufferings with
at magnanimity, though they were purposely
gthened out. To mark him as a conspirator,
was dressed in a red shirt, placed in a cart,
th his hands tied behind his back; and though
e rain poured incessantly on his head, the mob
ew mud at him while he passed to the place
execution, and insulted him in the cruellest
nner. As he ascended the platform, a person
ar him cried out in a sneering manner, 'Bailly
u tremble.' 'Yes (answered he) but not with
ar.' His person was tall, his countenance se-
le, but striking. Scarcely any philosopher has
peared more eminent in the different branches
science and literature. While he filled the
gisterial office, he gave away no inconsiderable
rt of his fortune to relieve the necessities of
e poor. He left a wife whom he had married
1787.

BAIL'MENT, *n. s.* The delivery of goods;
their consignment from one person to another,
the benefit of a third party. Sometimes also
e delivered back to the *bailor*, that is to him
at so delivered them: sometimes to the use of
bailee, that is of him to whom they are de-
ered.

Bailment, in law, is a delivery of goods in trust, upon a contract, expressed or implied, that the trust shall be faithfully executed on the part of the bailee. Thus if cloth be delivered, or (in our legal dialect), bailed to a taylor to make a suit of clothes, he has it upon an implied contract to render it again, when made, and that in a workmanly manner. If money or goods be delivered to a carrier, to convey from Oxford to London, or from Glasgow to Edinburgh, &c. he is under a contract in law to pay, or carry them to the person appointed. If a horse or other goods be delivered to an inn-keeper or his servants, he is bound to keep them safely, and restore them when his guest leaves the house. If a man takes in a horse, or other cattle, to graze and pasture in his grounds, which the law calls agistment, he takes them upon an implied contract to return them on demand to the owner. If a pawnbroker receives plate or jewels, as a pledge or security for the repayment of money lent thereon, at a certain day, he has them upon an express condition to restore them, if the pledger performs his part, by redeeming them in due time; for the due execution of which contract, many useful regulations are made by statute 30 Geo. II. ch. 24. If a landlord distrains goods for rent, or a parish officer for taxes, these for a time are only a pledge in the hands of the distrainers; and they are bound by an implied contract in law to restore them on payment of the debt, duty, and expenses, before the time of sale, or when sold, to render back the overplus, &c. Sir William Jones, in his learned work on the law of bailments, distinguishes five species of this contract. 1. Depositum, or deposit, which is a bailment of goods to be kept for the bailor withou reward. 2. Mandatum, or commission; a bailment of goods to be carried from place to place, or to have some act performed about them, without reward. 3. Commodatum, or loan for use; a bailment of a thing for a certain time, to be used by the borrower without paying for it. 4. Pignori acceptum, or pawn; a bailment of goods by a debtor to a creditor, in pledge as a security for the debt. 5. Locatum, or letting to hire; of which there are three subdivisions distinct enough to demand enumeration. (1.) Locatio rei, or bailment of a thing, to be used by the hirer for a reward. (2.) Locatio operis faciendi, or letting out of work and labor to be done, or care and attention to be bestowed, by the bailee, on the goods bailed for a reward. (3.) Locatio operis mercium vehendarum, or letting of care and pains in carrying the things bailed from place to place for a reward.

If a bailee refuse to return the things bailed upon a lawful demand, he becomes answerable for even the slightest neglect. If a guest be robbed by the servants or inmates of an inn, the inkeeper is responsible. And, if goods bailed to a common carrier be lost by any means, except by the act of God, or of the kings enemies, the carrier is bound to idemnify the owner.

BAILO, or Balio, a title formerly given at Constantinople, to the ambassador of Venice residing at the Porte. The Venetian consuls at Aleppo, Alexandria, Smyrna, and other parts of the Levant, are also denominated bailo.

BAILOQUE, in commerce, or **Balloque**, a French name for the ostrich feathers that are used as ornaments without dyeing.

BAIL-PIECE, the parchment containing the recognisance entered into by those who give bail for the appearance of another.

BAILS, in sea-language, the hoops that bear up the tilt of the boat.

Bails, Clerk of the, is an officer belonging to the court of King's Bench: he files the bail-pieces taken in that court, and attends for that purpose.

BAILYBOROUGH, a market town of Cavan, Ireland, twenty-five miles from Dublin. Between this place and King's Court, is a pool on the summit of a mountain, much frequented for its antiscorbutic virtues. Many bathe in the lake, and even rub the affected parts with the mud, which is of a greasy substance like tar. It has not been known to be frozen even in the severest winter.

BAIMALPOUR, a town of Bejapour, Hindostan, fourteen miles east of Satarah.

BAIN, a town of Brittany, in France, with 3450 inhabitants, and woollen manufactures; the head of a canton in the department of the Ille Vilaine, arrondissement of Redon, sixteen miles south of Rennes, and twenty-four south-west of Vitre.

BAINA, a market town of Hungary, in the county of Gran. It was formerly a considerable place.

BAINBRIDGE, a township of England, in the North Riding of Yorkshire, distant two miles from Askrigg, near the Ure, conjectured to have been a Roman station.

Bainbridge, Port, an inlet on the west coast of North America, extending about twenty miles northward. Long. of its west point, 212° 9½' E. lat. 59° 55' N.

Bainbridge (Dr. John), an eminent physician and astronomer, born at Ashby-de-la-Zouch, in 1582. He taught a grammar school for some years, and practised physic, employing his leisure hours in astronomy. At length he removed to London, was admitted a fellow of the college of physicians, and raised his character by his description of the comet in 1618. The next year Sir Henry Saville appointed him professor of astronomy at Oxford; and the masters and fellows of Merton college made him first junior, and then superior reader of Linacre's lecture. He died in 1643, leaving valuable MSS. preserved in the library of Trinity College, Dublin.

BAIOCCO, a copper coin current at Rome, equivalent to a tenth part of the julio, or a hundredth part of the ducat. It is worth about nine deniers, French money.

BAIRAM, or **Beiram**, a Turkish word which signifies a solemn feast. The Mahommedans have two Bairams, the great and the little.

Bairam, the Great, is properly that held by the pilgrims at Mecca, commencing on the tenth of Dhu Ihajie, when the victims are slain, and lasting three days. This is called by the Arabs, Id al adha, that is, the feast of sacrifice, as being celebrated in memory of the sacrifice of Abraham, whose son, God redeemed with a great victim. By European writers it is called the Lesser Bairam, as being less taken notice of by the generality of the people, who are not struck with it, because the ceremonies with which it is observed are performed at Mecca, the only scene of the solemnity. On this feast, after throwing little stones, one after another, into the valley of Mina, they usually kill one or more sheep, some a goat, bullock, or even a camel; and after giving a part thereof to the poor, eat the rest with their friends. After this, they shave themselves. The second day is a day of rest. On the third, they set out on their return home.

Bairam, the Little, is properly that held at the close of the fast Ramazan, beginning with the first full moon in the following month Shawal. This is called, in Arabic, Idal Fetz, or the Feast of breaking the Fast; by European writers, the Turkish Easter, because it succeeds Ramazan, which is their Lent, more usually the Great Bairam, because observed with great ceremony and rejoicing at Constantinople, and through Turkey, for the common people, to make amends for the mortification of the preceding month. The feast commencing with the new moon, the Mahommedans are very scrupulous in observing the time when the new moon commences; to which purpose, observers are sent to the tops of the highest mountains, who, the moment they spy the appearance of a new moon, run to the city, and proclaim Muzhdaluk! welcome news! as it is the signal for beginning the festivity.

BAIRDSTOWN, a post town of the United States, the capital of Nelson county, in the state of Kentucky. It is seated on the east side of Beech-Fork; thirty-five miles from Frankfort.

BAIR-MAN, or **Bare Man**, an old law term for an insolvent debtor, who was obliged to swear that he was not worth more than 5s. 5d.

BAIRNS part of gear, in the Scots law, i.e. the children's share of effects, is that portion which by the law falls to the children of a marriage, on the death of either of their parents; viz. two thirds when the father, and one third when the mother, dies first.

BAIROUT, or **Bagreuth**, formerly Berytus, a sea-port town of Syria situated on a plain in the pachalic of Saide, or Acre. There was formerly a harbour here, which is now choked up, nothing being seen of it but a pier, apparently of ancient construction, which will shelter a few boats. The town is surrounded by a wall, built by the famous Djezzar Pacha, after the place was bombarded by the Russians. With the same view he pulled down and rebuilt a high tower to the north-east. The streets of Bairout are narrow and irregular, and the suburbs nearly as large as the town. The environs are extremely agreeable, and they are laid out in gardens and plantations full of fine trees, especially mulberries. A stream descending from Mount Lebanon winds to the sea through the country. The population amounts to 7000 or 8000. It is the residence of a Greek, and a Maronite bishop; and there is a monastery of Capuchins. The staple commodity of commerce is raw silk, which is carried to Cairo, Aleppo, Damascus, and Europe. Earthen jars and jugs of a particular kind are also manufactured here; and are much esteemed from the nature of the clay. The cotton cloth is manufactured by the inhabitants

it mountains, and exported in con-
ntity. The trade to Europe is
ged by French and Italian mer-
ie place is the emporium to which
id Maronites send their products,
receive rice, tobacco, coffee, and
, indeed, considered the chief town
. Agrippa, the grandson of Herod
istructed a theatre and amphitheatre
as baths, and no expense was
bellishing them. Four magnificent
ans, of which three are within the
e town, with other ancient buildings,
ir grandeur. Bairout long remained
ossession of the Druses, and has
een united to the pachalic of Acre.
. & *n.* & *n. s.* batan, Sax. baitzen,
, Fr. perhaps from buita, Goth.
these different derivations, the
his word varies. As derived from
id German it means to put meat
to tempt fish or other animals; or
d to one's self or horses. Johnson
in this latter sense it is a corrup-
to abate speed on a journey. As
the French and Gothic it assumes a
signification, namely to invite, to
ack with violence, to harass by the
, as we bait a boar with mastiffs,
with bull-dogs. In hawking, the
to bait when she flutters or claps
if preparing to fly.

s lawe wol no man deme
e withouten answere,
man these misqu'eme
e *baighted* as a bere,
el worse they wol him tere,
ison wollen him pende,
nd in other gere,
t God woll, it may amende. *Chaucer.*

a sory mele now may she *baite*,
e dethe ful often may she waite,
e wild waves wol hire drive,
place ther as she shal arive. *Id.*

lde bull that being at a bay,
of a mastiffe and a hound,
rre dog that doe him sharpe assay,
side and beat about him round.
Faerie Queene.

What so strong,
est, will also want of might;
measures heaven all day long,
bait his steeds the ocean waves among.
Spenser.

ant'st angling is to see the fish
r golden oars the silver stream,
y devour the treach'rous *bait*.
Shakspeare.

ve's sweet *bait* from fearful hooks. *Id.*

y bears? We'll *bait* thy bears to death.
Id.

'd like estridges, that wing the wind;
eagles having lately bath'd;
golden coats like images. *Id.*

d by, sprung up with this their change,
signs above, to aggravate
, laden with fair fruit like that
Paradise the *bait* of Eve,
mpter. *Milton.*

of fishes feed upon insects, as is well
ers, who *bait* their hooks with them.
Ray.

BAIT. See ANGLING.

BAIT, WHITE, in ichthyology, a small fish, which is caught in great plenty, from August 1. to October 1. by stat. 30. Geo. II. ch. 21, in the river Thames, near Blackwall, and is esteemed very delicious. They are the fry of some fish, and have been attributed to the shad, the sprat, the smelt, and the bleak-fish. Pennant observes, that it belongs to the genus of cyprinus, because it has only three branchiostegous rays, and one dorsal fin; its body is compressed like that of the beak; its usual length is two inches; the under jaw is the longest; the irides are silvery, and the pupil black; the dorsal fin consists of about fourteen rays; the side line is straight; the tail forked, and the tips black.

To BAIT, in falconry, the action of a hawk when she claps her wings, or stoops to catch her prey.

BAITHOSUS, a Jew who, with Sadoc his fellow disciple, founded the sect of the Sadducees, denying a future state and resurrection. From Baithosus, they were for some time called Baithosæi as well as Sadducees, but are now only known by the latter denomination.

BAITING, the act of smaller or weaker beasts attacking and harassing greater and stronger; as the baiting of bulls or bears by mastiffs, or bull-dogs with short noses, that they may take the better hold. Utility has been pleaded in justification of bull-baiting; the chaffing and exercise of the animals making the flesh tenderer and more digestible. But a spirit of barbarism has the greatest share in supporting the sport: bulls are kept on purpose, and exhibited as standing spectacles for the public entertainment. It is a very popular amusement in Spain. In this sport, the chief aim of the dog is to catch the bull by the nose, and hold him down; to which end he will creep on his belly: the bull's aim, on the contrary, is, with equal industry, to defend his nose; in order to which he thrusts it close to the ground, where his horns are also in readiness to toss the dog. Bull-baiting was first introduced into England as an amusement in the reign of king John, about 1209.

BAJULUS, an ancient officer in the court of the Greek emperors. There were several degrees of bajuli; as, the grand bajulus, who was preceptor to the emperor; and the simple bajuli, who were sub-preceptors. The word is derived from the Latin verb bajulare, to carry or bear a thing on the arms or on the shoulders; and the origin of the office is thus traced by antiquaries. Children, and especially those of condition, had anciently, besides their nurse, a woman called gerula, as appears from several passages of Tertullian; when weaned, or ready to be weaned, they had men to carry them about and take care of them, who were called geruli and bajuli, a gerendo et bajulando. Hence it is, that governors of princes and great lords, were still denominated bajuli, and their charge or government bajulatio, even after their pupils were grown too big to be carried about. The word passed in the same sense into Greece.

BAJULUS is also used by Latin writers in the several senses wherein we use bailiff.

BAJULUS was likewise the title of a conventual officer in the ancient monasteries, to whom belonged the charge of gathering and distributing the money and legacies left for masses and obits; whence he was also denominated bajulus obituum novorum.

BAJULUS, in entomology, a species of cerambyx (callidium) that is found in the trunks of trees in the northern parts of Europe. The thorax is villous, with two tubercles; body brown. Fabricius. This is the cerambyx caudatus of Degeer; and leptura bajula of Scopoli.—Gmelin. Obs. a variety of this species (β) is described by Linnæus; the color of which is testaceous: thorax cinereous, and villous, with two little glabrous lines; in the Fabrician mantissa. Another variety (γ) is noticed, a native of Saxony, and only half the size of the former.

BAIZE', *n. s.* 'A kind of coarse open cloth stuff, having a long nap; sometimes frizzed on one side, and sometimes not frizzed. This stuff is without wale, being wrought on a loom with two treddles, like flannel.'—*Chambers.*

BAKE', *v. a.* & *n.*
BA'KEN, *part.*
BA'KED, *adjec.*
BA'KER, *n. s.*
BAKE'HOUSE, *n. s.*

Bæcan, Sax. becken, Ger. supposed by Wachter to come from bec, which, in the Phrygian language, signified bread. Bread, and the process of preparing it, are very naturally identified, as the one always suggests the other. It signifies to heat or to harden by fire, and is of a more general application than to the staff of life; though the substantives have no other reference, unless they have an affix, sugar-baker, &c. To bake, is then to heat or to harden any thing in the fire, in a furnace, an oven, or in the sun; or to do the work of baking. *Baking* denotes the progress towards the completion of this work. *Baker* is the agent by whom it is accomplished. *Baked* describes the quality of these substances which have gone through the entire process, as baked meats, contra-distinguished from viands of a different description; and *bakehouse* is a place appropriated to the business of baking.

He will take thereof, and warm himself; yea, he kindleth it, and *baketh* bread. *Isaiah.*

There was a cake *baken* on the coals, and a cruse of water, at his head. 2 *Kings.*

He could roste and sethe, and broile and frie,
Maken mortrewes and wel *bake* a pie,
But gret harm was it as it thoughte me,
That on his shinne a mormal hadde he. *Chaucer.*

His brede, his ale, was alway after on,
A better envy'd man was no where non;
Withouten *baken* mete never was his house,
Of fish and flesh, and that so plenteous
It snewed in his hous of mete and drinke,
Of all the deinties that men coud of thinke. *Id.*

Loke of Egipt the king Dan Pharao,
His *baker* and his boteler also,—
Wheder they ne felten non effect in dremes. *Id.*

I keep his house, and I wash, wring, brew, *bake*, scour, dress meat, and make the beds, and do all myself. *Shakspeare.*

The sun with flaming arrows pierc'd the flood,
And, darting to the bottom, *bak'd* the mud. *Dryden.*

The work of the fire is a kind of *baking*; and whatsoever the fire *baketh*, time doth, in some degree, dissolve. *Bacon.*

There be some houses wherein sweetmeats will relent, and *baked* meats will mould, more than others. *Id.*

With vehement suns
When dusty summer *bakes* the crumbling clods,
How pleasant is 't, beneath the twisted arch,
To ply the sweet carouse! *Philips.*

In life and health, every man must proceed upon trust, there being no knowing the intention of the cook or *baker*. *South.*

BAKING, as a term of art, though applicable to the drying of any moist substance by heat, has been used more particularly to describe the art of preparing bread, or of reducing meal of any kind, whether simple or compound, into bread. We read, indeed, as in Chaucer, (Prologue v. 436) of 'bake mete, of fish, and flesh;' and some of our modern inventions in the way of cooking apparatus seem destined to extend the triumphs of this art, and to bake a whole Lord Mayor's dinner in less time than even his worshipful guests consume in eating it. But the 'baker,' historically and legally, has been the baker of bread. In an Anglo-Saxon colloquy, preserved in the Cotton Library (MS. Tib. A. 3.) and presenting a lively picture of the manners of our ancestors, a sort of dialogue occurs with the baker (bæcere):—'Of what use is your art! We can live long without you.' He replies, 'You may live through some space without my art, but not long, nor well. Without my craft every table would seem empty; and without bread (hlafe) all meat would seem nauseous.'

We have therefore only here to remark, generally, that the art of baking, of the highest antiquity, is, in regard to its origin, involved in entire obscurity: traces of it being found in the history of all ancient nations. Abraham and Lot, in the patriarchal ages, evinced their hospitality by providing baked cakes or unleavened bread for their guests; and shortly after (Exod. xii. 15.) the prohibition of leavened bread to the Israelites proves that the art of making it was well known and ordinarily practised. In Egypt it is highly probable the Jews became acquainted with this art: though the Chaldeans are said to have practised it as early as any people. The Greeks ascribe the invention of it to Pan, who Diodorus informs us, was originally an Egyptian deity, and that Thebes was built to his honour. (lib. i.) The Romans were long reproached as a pulse-eating people. Until 580 years after the founding of their metropolis it contained no professed bakers. They first settled in it, we are told by Pliny (Hist. Nat. xviii. 11), during the war with Perseus, king of Macedon: we find, however, before this time families baking their own bread.

Bakers, as we have seen, were esteemed important members of society by our ancestors. The incorporation of a London company with this title took place in the early part of the fourteenth century (1307), and by a statute 22 Hen. VIII. cap. 13., their trade was exempted from being reckoned as handicraft. Until a late act of parliament abolished their control of the price, called the assize of bread, this constituted an important portion of the duties of the London magistracy.

Under the word Bread, we propose to treat of the entire manufacture of that important article: and the reader will find much useful information connected with the economy of fuel in baking under Combustion, Heat, Chemistry, and Furnace.

Baker (David Erskine), son of Henry Baker, was a young man of genius and learning. Having been adopted by an uncle, who was a silk throwster in Spitalfields, he succeeded him in the business; but wanted the prudence and attention necessary to secure prosperity in trade. Like his father, he was both a philosopher and a poet; and wrote several occasional poems, some of which were much admired at the time. His principal publication was, The Companion to the Play-house, in two volumes, 1764, 12mo; a work, which though imperfect, has considerable merit.

Baker (Henry), an ingenious and diligent naturalist, was born in Fleet-street, London, about the end of the seventeenth, or beginning of the eighteenth century. He was brought up under an eminent bookseller, who preceded the elder Dodsley, but being of a philosophical turn, and having studied the methods practicable in the cure of deaf and dumb persons, he made this the employment of his life. In the prosecution of so valuable and difficult an undertaking he was very successful. He married Sophia, youngest daughter of the famous Daniel Defoe, who brought him two sons, both of whom he survived. In January, 1740, he was elected a fellow of the Society of Antiquaries; and, on the twelfth of March following, the same honor was conferred upon him by the Royal Society. In 1744 Sir Godfrey Copley's gold medal was bestowed upon him, for discoveries in the chrystallisation and configurations of saline particles. Having led a very useful and honorable life, he died in the Strand in 1774, aged above seventy. Mr. Baker was a very constant and useful attendant at the meetings of the Royal and Antiquarian Societies, and in both was frequently chosen of the council. Several of his communications are printed in the Philosophical Transactions; and he was the means, by his extensive correspondence, of conveying to the Society the intelligence and observations of many other inquisitive and philosophical men, at home and abroad. The society for the encouragement of arts, manufactures, and commerce, is under singular obligations to him. Being one of its earliest members, he contributed greatly to its rise and establishment, and at its first institution officiated for some time gratis as secretary. He drew up a short account of its origin, which was read before the society of antiquaries. Mr. Baker was a poetical writer in the early part of his life. His Invocation of Health was printed without his knowledge; but reprinted by himself in his Original Poems, serious and humorous, part I. 8vo. 1725. Part II. came out in 1726. Among these poems are some tales as witty, and as loose as Prior's. He was the author likewise of the Universe, a poem, which has been several times reprinted. His account of the water polype, originally published in the Philosophical Transactions, was afterwards enlarged into a separate treatise, and has gone through several editions. But his principal publications are, The Microscope made Easy, and Employment for the Microscope.

Baker (Sir Richard), author of the Chronicle of the Kings of England, was born at Sissingherst, in Kent, about the year 1568. After completing his studies at Oxford, he travelled, and upon his return was created A. M. In 1603 he was knighted by king James I. and in 1620, high sheriff of Oxfordshire; but engaging to pay some of the debts of his wife's family, he was reduced to poverty, and obliged to retire for shelter to the Fleet prison. His works are, 1. Meditations and Disquisitions on the Lord's Prayer. 2. Meditations, &c. on several Psalms. 3. Meditations and Prayers upon the Seven Days of the Week. 4. Cato Variegatus, or Cato's Moral Distiches varied, &c.—Mr. Granger observes. 'That his Chronicle of the Kings of England was more esteemed by readers of the lower class, than by such as had a critical knowledge of history. The language of it was called polite: and it long maintained its reputation, especially among country gentlemen. The author seems to have been sometimes more studious to please than to inform, and with that view to have sacrificed even chronology itself to method.' In 1658 Edward Philips, nephew to Milton, published a third edition of this work, with the addition of the reign of Charles I. It has been several times reprinted, and is now carried as low as the reign of George I. Sir Richard also translated several works from the French and Italian. He died in the Fleet, very poor, in 1645.

Baker (Thomas), an eminent mathematician, was born at Ilton, in Somersetshire, about 1625, and entered at Wadham College, Oxon, 1640; after which he was vicar of Bishop's Nymmet, in Devonshire, where he wrote The Geometrical Key, or the Gate of Equations unlocked, by which he gained a considerable reputation. A little before his death, the members of the Royal Society sent him some mathematical queries, to which he returned such satisfactory answers, that they presented him a medal. He died at Bishop's Nymmet, in 1690.

Baker (Thomas), a very ingenious and learned antiquary, descended from an ancient family, was born at Crook, in 1656; educated at the free school at Durham, and thence removed to Cambridge in 1674. He proceeded B. A. in 1677; M. A. 1681; was elected fellow, March, 1679-80: ordained deacon by Bishop Compton, Dec. 20th, 1685, and priest by Bishop Barlow, Dec. 19th, 1686. Being chaplain to Lord Crew, bishop of Durham, his Lordship collated him to the rectory of Long-Newton, June, 1687; and intended to have given him that of Sedgefield, worth about £700 a year, with a golden prebend, had he not incurred his displeasure for refusing to read King James II.'s declaration for liberty of conscience. Mr. Baker resigned Long-Newton, August 1st. 1690, refusing to take the oaths; and retired to his fellowship at St. John's, in which he was protected till Jan. 20th, 1716-17, when he was dispossessed of it, in consequence of scrupling to take the oaths required on the accession of George I. but he retained his chambers at St. John's college, where he was highly esteemed, and Mr.

Prior, the celebrated poet, gave the profits of his own fellowship to Baker, in order to supply the loss of income which he had suffered. He is said to have retained a lively resentment of his deprivations; and designated himself in his books, as well as in those which he gave to the college library, socius ejectus, and in some, ejectus rector. He continued to reside in the college as commoner master till his death, July 2d, 1740. Mr. Baker's correspondence with men of learning was extensive; and he was liberal in his literary communications to those who solicited information; particularly to bishop Burnet, who was indebted to him for several remarks and corrections relating to his History of the Reformation. Of his extensive collections, he left twenty-three volumes in folio, written by his own hand, to Lord Oxford, and they now compose part of the Harleian collection in the British museum. He also bequeathed fifteen volumes folio, of a like kind, to the public library at Cambridge, together with other MSS. and printed books. Biog. Brit. 'Mr. Baker,' says the Earl of Orford, was 'perhaps the sole instance of a man who bequeathed his worldly goods to a society that ejected him, and to the ministers of a church in which he had lost preferment.' The only works he printed were, 1. Reflections on Learning, showing the insufficiency thereof in its several particulars, in order to evince the usefulness and necessity of Revelation, Lond. 1709-10; and 2. The Preface to bishop Fisher's funeral sermon for Margaret, Countess of Richmond and Derby, 1708; both without his name. Dr. Knight styles him 'the greatest master of the antiquities of this our university;' and Hearne pays him a similar compliment; expressing his wish that his collections were published. Mr. Baker intended something like an Athenæ Cantabrigienses, on the plan of the Athenæ Oxonienses.

BAKER (Sir George), M. D. was the son of a Devonshire clergyman, born in 1722, and educated at Eton and Cambridge. He commenced practice at Stamford, whence he soon removed to London, and soon attained considerable reputation, being appointed physician in ordinary to the king, and physician to the queen: he was also chosen fellow of the Royal and Antiquarian Societies. In 1776 he was created a baronet, and in 1797 was placed at the head of his profession, being elected president of the College of Physicians. He died June 15th, 1809. Sir George Baker had the reputation of being an elegant classical scholar and critic. His published works are, An Essay on the Cause of the Endemical Colic of Devonshire, (about 1767), which gave rise to a controversy relative to the origin of that malady, which he attributed to the use of cyder, much impregnated with lead. Preface to a late edition of the Pharmacopœia of the Medical College, with numerous Essays in the Medical and Philosophical Journals of his time.

BAKERS' COMPANY; there are two companies of this name, the White and the Brown Bakers. The White Bakers are of great antiquity, having been a company as early as Edward II. Their arms are (fig. 1.) '*gules*, three garbs, *or* on a chief; an arm issuing out of a cloud, *proper*, holding a pair of scales, *or*,
three garbs of the first.'

Fig. 1.

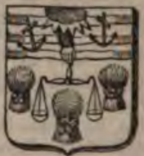


Fig. 2.

The Brown Bakers were incorporated
of James I. Their arms (fig. 2) are
hand issuing out of the clouds, *prope*
a pair of scales; an anchor in a ch
wavy, *or* and *azure*, on a chevron, *gule*
three garbes.

BAKEWELL (Robert), a famou
born in 1726, on his father's estate of
Leicestershire. For some years b
father's death, he had the manageme
farm, and his attention was much taken
proving the breed of his cattle. In
this object, he travelled over England
land and Holland; and such was hi
that in a short time the Dishley sh
prized so much above others, that he
one of his rams for no less than 400
and for one in particular, he drew the
sum of 800 guineas, besides the ewes
own stock, which, by the same calculati
a total of 1200 guineas! Dishley shee
tinguished by the fineness of their
flesh, the lightness of the offal, and qu
sition, which makes them fatten with
than other sheep equally heavy. Mr.
also greatly improved his black cat
could let his bulls at fifty guineas a sea
He died in 1795. On the other han
been stated that he failed in business
once; and, with regard to the effect
provements, it has been sarcastically
that they enabled him to make me
for any body to eat, and too dear for
to purchase.

BAKEWELL, a market town and par
hundred of High-Peak, Derby, eleven
from Chesterfield, and 152 north from
It is seated on the river Wye, and cont
inhabitants. It is supposed to have b
man town. The place is much reso
anglers; the Wye producing plenty
grayling, &c. There are several goo
of stone, and lead and zinc mines, in t
bourhood; here is also a large cotton
tory. Three miles distant is Chatswor
nificent seat of the duke of Devonsh
celebrated mansion was erected by W
first duke of Devonshire, in the year 17
unfortunate Mary, queen of Scots, wa
to thirteen years' captivity in the old
at this place. On the east side, not f
from the town, is a high mountain, on
which millstones are dug. The living of
is in the gift of the dean and chapter
field; and the parish is exempt from
jurisdiction. Market on Monday. It
on Easter Monday, Whit Monday, the

after October 10th, and the Monday after November 22d. At a short distance from Bakewell is Ashford, where are some marble works that were the first of the kind established in England. Great quantities of black and gray marble are sawed and polished by means of machinery kept in motion by water. About two miles south of Bakewell is Haddon Hall, a truly venerable mansion, belonging to his grace the duke of Rutland. The high turrets and embattlements of this house, when beheld at some distance, give it the appearance of an ancient fortified castle. It presents, perhaps, a more complete specimen of the ancient English baronial mansion than is to be found in any other house in the kingdom. For a particular description of it see the *Beauties of England and Wales* vol. iii. p. 494.

BAKHISHISARAI, or simply Bacca-Serai, 'the summer-house,' a large town of European Russia, in the Crimea, government of Taurida, formerly the residence of the khans, situated between two hills, and containing from 10,000 to 12,000 inhabitants. Here are manufactures of Turkey leather, saddles, silk stuffs, and cutlery. Fifty miles north of Caffa. Long. 33° 52′ E., lat. 45° 10′ N.

BAKOONGAR, one of the Sooloo islands. It is high and rocky, and has some inhabitants.

BAKOS, a river of Great Bukharia, from which and others the Harrat is formed.

BAKOU, or Baku, a town of Persia, in the province of Shirvan, situated at the extremity of the Gulf of Ghilan, occupying the peninsula of Absharon, on the west coast of the Caspian. It is esteemed the most commodious haven in that sea, as vessels may ride securely at anchor in seven fathoms of water, within eighty yards of the shore; but the number of shoals, islands, and sand banks, render the entrance, in some places, difficult and dangerous. The town is of an obtuse triangular form; it occupies a strong and fine situation, and is defended by a strong wall and deep ditch. Good cotton is yielded in the neighbourhood, together with opium, rice, silk, wine, salt, and naptha. In the latter article is the principal trade of Bakou, 1000 or 1500 pounds of it being yielded by the wells in this district daily. The country around is highly volcanic, abounding with inflammable gases, which, being collected in leather flasks, will ignite at a distance. Hence, the town and its environs abound in monuments of the superstition of the Guebres, Parsees, and other fire worshippers, some of whom yet frequent a spot called Ateschjah. Various temples built of stone appear; in one of which a blue lambent flame issued from a large hollow cane near the altar. The jurisdiction of Baku extends over thirty-two villages. It was ceded to Russia in the year 1723, and restored to Persia in 1735; but retaken by the Russians in 1801, who have ever since kept possession of it.

BAKTEGAN, or Bakteghian, a salt lake in the province of Fars, Persia, about seventy-five miles in circuit. It is nearly dry in summer, when a quantity of fine salt, left by evaporation, is collected from the bottom. Distant ten miles south-east of Shiraz.

BAKTSCHISARI, an open town on the west side of the Crimea, near the sea, seated between two mountains. It is one of the places of residence of the cham of Tartary.

BAKU. See Bakou.

BAL, a Gaelic word, used in the composition of the names of many places, particularly in Scotland and Ireland, and signifying a town, village, or place of residence.

BALA, a market town of Merionethshire, in North Wales, and a borough by prescription, but sending no member to parliament. It is 202 miles north-west of London, and 26 from Welshpool. Population 1163. The assizes for the county are held here alternately with Dolgelly. There are vestiges of three Roman camps in the neighbourhood, and adjacent to the town is a large artificial mount, called Tommen y Bala, supposed to be of Roman origin. Its manufactures are woollen gloves, stockings, and the caps called Welsh wigs.

Pemble Mere, Llyn Tegid, or Bala lake, lies a few miles to the south of the town, and is the largest sheet of water in Wales, being four miles in length, and about three quarters of a mile in breadth. Its depth of water is about forty feet; but it sometimes rises above its usual level, overflowing the beautiful vale of Eidernion. It abounds in fish, and the tradition of the country states that the rive Dee, like the Rhone at Geneva, passes through without mixing its waters with those of the lake.

BALAAM; from בלר, without, and עם, people; the son of Beor, a prophet and diviner of Pethor, upon the Euphrates, whose practices with Balak, king of the Moabites, are recorded in Numbers xxii.—xxiv. as well as his involuntary prophecies of the prosperity of Israel. Jewish writers are generally of opinion that he was a pretending astrologer, who observing when men were under a bad aspect of the stars, pronounced a curse upon them; which sometimes coming to pass, gained him reputation. Several ancient fathers suppose him to have been a common soothsayer, who undertook to tell future events, and discover secrets, by no very justifiable arts. Origen will have it, that he was one of the devil's sorcerers, and that of him he went to enquire; but that God prevented him, and put what answers he pleased into his mouth. It cannot be denied, however, that the Scriptures expressly call him a prophet, 2 Pet. ii. 16, and therefore some later writers have imagined that he had once been a good man, till loving the wages of iniquity, and prostituting the honour of his office to covetousness, he apostatised from God, and devoted himself to idolatrous practices. Philo, in his Life of Moses, passes over the miracle of his ass speaking to the prophet in silence; and Maimonides pretends that it happened to Balaam in a prophetic vision only. St. Peter, however, assuredly speaks of the fact as literal and certain. We must own, says Calmet, that this is a miraculous fact related by an inspired writer, whose authority we ought not to call in question in the least particular; but we should study such ways of explaining it as are most conformable to reason, and most proper to solve the difficulties of it, without attacking the truth of the history. The miracle, says bishop Newton, was not unnecessary. 'It evidenced, that the same divine power, which caused the ass to speak, compelled Balaam to utter blessings contrary to his inclination. And accordingly he was overruled to bless the people, though he came prepared and disposed to curse them; which, according to Bochart, was the greater miracle of the two, for the ass was merely passive, but Balaam resisted the good motions of God.'

BALAAMITES, a sect in the first ages of Christianity, of the same import in the Hebrew language with Nicolaitans in the Greek.

BALABAC, an island of the eastern seas, off the south extremity of Palawan. Long. 117° 10′ E., lat. 8° N.

BALABEA, an island of the South Pacific Ocean, off New Caledonia. Long. 164° 22′ E., lat. 20° 7′ S.

BALABOLA, one of the Society Islands in the South Sea, visited by Captain Cook. It is only eight leagues in circumference, but has a very capacious harbour on the west side.

BALACHNA, or BALAKHAN, a town of European Russia, in the government of Nishnei-Novgorod, on the right bank of the Wolga. The salt springs here were closed in 1755. The inhabitants, engaged partly in agriculture and partly in trade, amount to 5000. It is eighteen miles W. N. W. of Nishnei-Novgorod, and 120 E. S. E. of Petersburg.

BALADAN, the scripture name for a king of Babylon, Isa. xxxix. 1. 2 Kings xx. 12, called by profane authors Belesus or Belesis, Nabonassar or Nanybrus. He at first was no more than governor of Babylon; but entering into a confederacy with Arbaces, governor of Media, and rebelling against Sardanapalus, king of Assyria, these two generals marched against him with an army of 400,000 men, and were beat in three different battles. But the Bactrians deserting the king, and coming over to Baladan and Arbaces, the rebels attacked the enemy in the night, and made themselves masters of his camp. After this misfortune, Sardanapalus retreated to Nineveh, and left the command of his army to his brother-in-law Salamenes. The conspirators attacked Salamenes, and defeated him in two great battles; after which they laid siege to Nineveh. Sardanapalus sustained the siege for three years; but the Tigris, in the third year, overflowing its banks, beat down twenty furlongs of the walls: whereupon the conspirators entered the city and took possession of it, after Sardanapalus had burnt himself and all his most valuable effects upon a funeral pile, erected for that purpose in his palace. Baladan was thereupon acknowledged king of Babylon, as Arbaces was of Media. Sir Isaac Newton supposes Baladan to have been the son of Pul, king of Assyria, and to have had Babylon for his portion.

BALÆNA, the whale, in zoology, from βαλλω, to cast up, because it throws up water, a genus of the mammalia class, belonging to the order of cete. The characters of this genus are, the balæna, in place of teeth, has a horny plate on the upper jaw, and a double fistula or pipe for throwing out water. There are five principal species; viz. 1. B. bo-ops, the pike-headed whale, has a double pipe in its snout, three fins and a hard horny ridge on its back. The belly is full of longitudinal folds or rugæ. It frequents the northern ocean. The length of that taken on the coast of Scotland, as remarked by Sir Robert Sibbald, was forty-six feet, and its greatest circumference twenty. This species takes its name from the shape of its nose, which is narrower and sharper pointed than that of other whales. 2. B. Musculus, has a double pipe in its front, and three fins; the under jaw is much wider than the upper one. It frequents the Scotch coast, and feeds upon herrings. 3. B. mysticetus, the common whale, which has many turnings and windings in its nostrils, and no fins on the back. This is the largest of all animals; it is commonly found of from fifty to sixty feet; but some have been taken in modern times, in the northern seas ninety feet in length. But as Mr. Scoresby observes, 'there is every probability of an error having been committed two or three centuries back (from which period some of our dimensions have been derived), when we know that whales were usually viewed with superstitious dread, and their magnitude and powers in consequence highly exaggerated. Of 322 individuals, in the capture of which I have been personally concerned, no one, I believe, exceeded sixty feet in length, and the largest I ever measured was fifty-eight feet from one extremity to the other, being one of the longest to appearance I ever saw. From fifty to sixty feet therefore may be considered the average length of the Greenland whale.' The head is very much disproportioned to the size of the body, being one third of the size of the fish, and the under lip is much broader than the upper. The tongue is composed of a very soft spongy fat, capable of yielding five or six barrels of oil. The gullet is very small, not exceeding four inches in width. In the middle of the head are two orifices through which it spouts water to a vast height, and with a great noise, especially when disturbed or wounded. The eyes are not larger than those of an ox, and when the chrystalline humor is dried, it does not appear larger than a pea. They are placed towards the back of the head, being the most convenient situation for enabling them to see both before and behind; as also to see over them, where their food is principally found. They are guarded by eye-lids and eye-lashes, as in quadrupeds; and they seem to be very sharp sighted. Nor is their sense of hearing in less perfection; for they are warned at a great distance of any danger preparing against them. It would seem as if nature had designedly given them these advantages, as they multiply little, in order to continue their kind. It is true, indeed, that the external organ of hearing is scarcely perceptible, for this might only embarrass them in their natural element; but as soon as the thin scarf-skin after mentioned is removed, a black spot is discovered behind the eye, and under that is the auditory canal, that leads to a regular apparatus for hearing. In short, the animal hears the smallest sounds at very great distances, and at all times, except when it is spouting water; which is the time that the fishers approach to strike it.

What is known by the name of whalebone, adheres to the upper jaw of the whale; and is formed of thin parallel laminæ, some of the longest four yards in length; of these there are commonly 350 on each side, but in very old fish more; about 500 of them are of a length fit for use, the others being too short. They are surrounded with long strong hair, not only that they may not hurt the tongue, but as strainers to prevent the return of their food when they discharge the water out of their mouths. The real bones of the whale are hard, porous, and full of marrow. Two great strong bones sustain the upper lip, lying against each other in the shape of an half moon. The tail is broad and semilunar; and when the fish lies on one side, its blow is tremendous. The tail alone it makes use of, to advance itself forward in the water; and it is surprising to see with what force and celerity its enormous bulk cuts through the ocean. The tail occupies a surface of eighty or 100 square feet, it is only five or six feet long, but from eighteen to twenty-four or twenty-six feet in breadth, and is placed horizontally: its motions are rapid and universal. The fins are only made use of for turning in the water, and giving a direction to the velocity impressed by the tail: they are from seven to nine feet long, and four to five broad, being capable of motion in any direction; but they are prevented from being raised above the horizontal position by the tension of the skin and flesh below; the account therefore of whales supporting their young on their back by means of their fins, must be fabulous. The whale varies in color; the back of some being red, the belly generally white. Others are black, some mottled, others quite white. Their colors in the water are extremely beautiful, and their skin is very smooth and slippery. The outward or scarf skin of the whale is no thicker than parchment; but this removed, the real skin appears, of about an inch thick, and covering the fat or blubber that lies beneath: this is from eight to twelve inches in thickness; and is, when the fish is in health, of a beautiful yellow. The muscles lie beneath; and these, like the flesh of quadrupeds, are very red and tough. The teats in the female are in the lower part of the belly. The fidelity of the male and female to each other exceeds whatever we are told even of the constancy of birds. Some fishers, Anderson informs us, having struck one of two whales, a male and a female, that were in company together, the wounded fish made a long and terrible resistance: it struck down a boat with three men in it, with a single blow of its tail, by which all went to the bottom. The other still attended its companion, and lent it every assistance; till, at last, the fish that was struck, sunk under the number of its wounds; while its faithful associate, disdaining to survive the loss, with great bellowing, stretched itself upon the dead fish, and shared his fate. The whale goes with young nine or ten months, and generally produces one young one, and never above two. When she suckles her young, she throws herself on one side on the surface of the sea, and the young one attaches itself to the teat. Nothing can exceed the tenderness of the female for her offspring; she carries it with her where ever she goes, and when hardest pursued, even when wounded, she still clasps her young one; and when she plunges to avoid danger, takes it to the bottom; but rises sooner than usual, to give it breath again. In June 1811, says Mr. Scoresby, one of my harpooners struck a sucker, with the hope that it would lead to the capture of the mother. Presently she arose close by the 'fast boat,' and seizing the young one, dragged about a hundred fathoms of line out of the boat with remarkable force and velocity. Again she arose to the surface; darted furiously to and fro; frequently stopped short, or suddenly changed her direction, and gave every possible intimation of extreme agony. For a length of time she continued thus to act, though closely pursued by the boats; and, inspired with courage and resolution by her concern for her offspring, seemed regardless of the danger which surrounded her. At length, one of the boats approached so near, that a harpoon was hove at her. It hit, but did not attach itself. A second harpoon was struck; this also failed to penetrate; but a third was more effectual, and held. Still she did not attempt to escape, but allowed other boats to approach; so that in a few minutes three more harpoons were fastened; and in the course of an hour afterwards she was killed. The young ones continue at the breast for a year; during which time, they are called by the sailors, short-heads. They are then extremely fat, and yield above fifty barrels of blubber. The mother at the same time is equally lean and emaciated. At the age of two years they are called stunts, as they do not thrive much immediately upon quitting the breast: they then yield scarcely above twenty or twenty-four barrels of blubber: after this they are called skull-fish, and their age is wholly unknown. 4. B. physalus, or fin-fish, is distinguished from the common whale by a fin on the back, placed very low and near the tail The length is greater than that of the common kind, being often 100 feet; but much more slender. It is furnished with whalebone in the upper jaw, mixed with hairs, but short and knotty, and of little value. The blubber also on the body of this kind is very inconsiderable. These circumstances, added to its extreme fierceness and agility, which render the capture very dangerous, cause the fishers to neglect it. The natives of Greenland, however, hold it in great esteem, as it affords a great quantity of flesh, which to their palate is very agreeable. The lips are brown, and like a twisted rope: the spout hole is as it were split in the top of its head, through which it blows water with much more violence, and to a greater height, than the common whale. The fishers are not very fond of seeing it, for on its appearance the others retire out of those seas. Some writers conjecture this species to have been the φυσαλος, and physeter, or blowing whale of Oppian, Ælian, and Pliny: but, since those writers have not left the least description of it, it is impossible to judge which kind they meant; for in respect to the faculty of spouting out water, or blowing, it is not peculiar to any one species, but common to all the whale kind. The physalus inhabits the

European and American Oceans: it feeds upon herrings and other fish. 5. B. rostrata, beaked whale: rostrata mysticete. The nose of this species is elongated to a beak, and the dorsal fin fat. It inhabits the Norway seas, is rarely seen near England, is very black, much resembling the boops, swims rapidly, and is about twenty-five feet long.

Each species of whale propagates only its own kind, and does not at all mingle with the rest: however, they are generally seen in shoals, of different kinds together, and make their migrations in large companies. They are gregarious animals; which implies their want of mutual defence against the invasions of smaller but more powerful fishes. It seems astonishing, therefore, how a shoal of these enormous animals find subsistence together. To increase our wonder, we not only see them herding together, but usually find them fatter than any other animals of whatsoever element. We likewise know that they cannot swallow large fishes, as their throats are so narrow that an animal larger than a herring could not enter. How then do they subsist, and grow so fat? A certain sort of small snail, or, as Linnæus tells us, the medusa, or sea-blubber, is sufficient for this supply. (See Medusa.) They float in vast abundance in the northern seas. Content with this simple food, it pursues no other animal, leads an inoffensive life in its element, and is harmless in proportion to its strength to do mischief. But Martens says he has found a barrel or more of herrings at a time in the belly of the whale. Inoffensive in itself, however, it has many enemies ready to take advantage of its disposition, and of its unfitness for combat. There is a small animal of the shell-fish kind, called the whale-louse, that sticks to its body as we see shells sticking to the foul bottom of a ship. This insinuates itself chiefly under the fins; and whatever efforts the great animal makes, it still keeps its hold, and lives upon the fat, which it is provided with instruments to arrive at. The sword-fish, however, is the whale's most terrible enemy. See Xiphias. 'At the sight of this little animal,' says Anderson, 'the whale seems agitated in an extraordinary manner; leaping from the water as if with affright: wherever it appears, the whale perceives it at a distance, and flees from it in the opposite direction. I have been myself,' continues he, 'a spectator of their terrible encounter. The whale has no instrument of defence except the tail; with that it endeavours to strike the enemy; and a single blow taking place would effectually destroy its adversary; but the sword-fish is as active as the other is strong, and easily avoids the stroke; then bounding into the air, it falls upon its great subjacent enemy, and endeavours, not to pierce it with its pointed beak, but to cut it with its toothed edges. The sea all about is seen dyed with blood, proceeding from the wounds of the whale; while the enormous animal vainly endeavours to reach its invader, and strikes with its tail against the surface of the water, making a report at each blow louder than the noise of a cannon.' In calm weather, the fishermen lie upon their oars as spectators of this scene, until they perceive the whale at an extremity: then they row towards him; and his enemy retiring at their approach, they enjoy the fruits of the victory. Seamen report, that a fish called the thresher, a species of squalus, is in league with the sword-fish; and that the former keeps on the back of the whale, while the latter wounds it underneath in the belly. The grampus, and other large fishes of the cetaceous order, are attacked and destroyed by the same enemies in a similar manner. The whale has other desperate enemies in sharks of different sizes, from one to three fathoms; and it generally avoids the seas where sharks abound. But among all the enemies of this harmless animal, man may be ranked as the greatest.

Viewing the whale in a commercial light, we must observe, that the English were late before they engaged in this fishery. It appears by a set of queries, proposed by a merchant, in 1575, in order to get information in the business, that we were at that time totally ignorant of it, being obliged to send to 'Biskaie for men skilful in the catching of the whale and ordering of the oil, and one cooper skilful to set up the staved cask.' This seems strange: for by the account Octher gives of his travels, to king Alfred, near 700 years before that period, it is evident that he made that monarch acquainted with the Norwegians practising the whale fishery; it seems therefore that all memory of that gainful employment, as well as of the able voyager Octher and his important discoveries, was lost for nearly seven centuries. The earliest notice we find of this article in our commerce is by Hackluyt, who says it was brought from the Bay of St. Laurence by an English ship that 'went there for the barbes and fynnes of whales and train oil, A. D. 1594, and found there 700 or 800 whale fynnes, part of the cargo of two great Biskaine ships, that had been wrecked three years before.' About 1598, the town of Hull had the honor of first seriously attempting this profitable branch of trade; which has largely contributed to its aggrandizement.

We will resume the history and description of it, however, under Fisheries, which see. Linnæus makes the physeter and delphinus, which are ranked among the whales by some writers, two distinct genera. See Physeter and Delphinus.

BALAGHAR, a district of Persia, in the principality of Baku, including some villages, near which are twenty-five wells of black naphtha. There is also one of a very inflammable white naphtha: this remains lighted on the surface of water; whence it is a common amusement among the inhabitants to throw pieces of it, during calms, into the sea. It is subject to Russia.

BALAGHAUT, or Balagate, the upper passes of a chain of mountains which divides the coast of Malabar from that of Coromandel, running almost the whole length of the peninsula on this side the Ganges. Some parts of them are covered with fine red earth, which is blown by the strong west winds as far as Ceylon; and when the rays of the sun are reflected from these mountains, they seem to be on fire. They make surprising alterations in the seasons; for on the north side of the cape Comorin, it is winter in May, June, July, August, and September, in which months it is summer on the south side: on one side there are continual tempests, thunder and lightning, while the other enjoys a constant serenity. When black clouds are gathered about the mountains, they are followed by sudden rain, which causes the overflowing of the rivers, and chokes them up with sand, insomuch that they are unnavigable for some time afterwards. The buildings and clothes of the inhabitants of this region are scarcely sufficient to defend them from the weather. They live upon rice, milk, roots, and herbs, with very little meat; they have likewise a sort of small arrac, but they are not given to drunkenness. These mountains are also called the Ghauts.

BALAGUER, a town of Spain, in Catalonia, situated on the Segre, at the foot of a steep hill, in a tract of uncommon fertility. It contains four convents, a castle, and 3700 inhabitants. The neighbourhood is very fertile. In 1709 Balaguer was taken by Stahremberg, for Charles III. and in 1710 by the duke de Vendome, for Philip V. It is the capital of a district, and lies sixty-three miles north-west of Barcelona, and 219 north-east of Madrid. Long. 0° 40′ E., lat. 41° 55′ N.

BALAK; בלק, Heb. i. e. a destroyer; the son of Zippor, a king of the Moabites, who, alarmed at the success of the Israelites, and jealous of their prosperity, sent for Balaam, and bribed him to curse them. Num. xxiii. and xxiv. The divinations of Balaam, however, and the still more powerful enchantments of the fair Moabitesses, appear to have been the only weapons employed by Balak against the prosperity of Israel; for we find Jephthah urges it as an argument, in his manifesto against the king of the Ammonites (Judges xi. 25.), that Balak never actually fought against them.

BALAKLMA, or Balachra, a town of Russia, in the province of Nizney Novgorod, on the Volga, twenty miles north of the city of Nizney Novgorod. Long. 44° 0′ E., lat. 56° 30′ N.

BALALUAN, a volcano in the island of Sumatra, situated in the northern part of the island, near Acheen.

BALAMATTA, a town on the east coast of the island of Bouro. Long. 126° 17′ E., lat. 3° 12′ S.

BALAMBANGAN, a fertile island in the Eastern seas, between Borneo and Magindanao. It is about fourteen miles in length from south-east to north-west, and three to six in breadth, and has two harbours. Being ceded by the king of Sooloo to the English East India Company, a settlement was established upon it in 1773; but the Sooloo surprised it in 1775, and seized the effects of the company, to the value of above £200,000 sterling. A new establishment was formed in 1803, which proving expensive, was withdrawn. Previous to 1774 it was nearly uninhabited. Distant fifteen miles from the northern extremity of Borneo. Long 117° 5′ E., lat. 7° 15′ N.

BALAMBUAN, or Ballanbouang, or Palambuan, a district and town in the south-east of the island of Java, along the shore of the straits of Bally; formerly governed by an independent sovereign. A range of mountains, intersecting the island longitudinally, commences here. Considerable trade in pepper was once carried on here; but the European resident having removed to Bagnouangay, it has been transferred thither. The town stands on a river of the same name, and is protected by a fort.

Balambuan, or Palambuan, a strong trading town of Asia, in the East Indies, on the east end of the island of Java, and capital of a territory of the same name.

BALAMIO (Ferdinand), of Sicily, was physician to pope Leo X. who greatly regarded him. He was no less skilled in the belles lettres than in medicine; and he cultivated poetry and the Greek learning with much success. He translated from the Greek into Latin several pieces of Galen, which were first printed separately, and afterwards inserted in the works of that ancient physician, published at Venice, 1586, in folio. He flourished at Rome about the year 1555.

BALAM-PULLI, in botany, a name used by some authors for the tree whose fruit is the tamarind of the shops.

BAL'ANCE, *n. s. v. a.* & *n.*
Bal'ancing,
Bal'ancer.
Fr. *balance*; Lat. *bis lanx*. One of the six simple powers in mechanics, used principally for determining the difference of weight in heavy bodies; and consequently their masses or quantities of matter. For further definition and description, see Clock-making and Mechanics. The metaphorical applications of the different parts of this word are various. To balance in the mind is to compare one thing with another. The act of comparing two things together is called a balance; it also is used to signify fluctuation between equal motives: as applied to accounts, it means that which is wanting to make two parts even, and the payment of what is deficient, to produce equality in the debtor and creditor statements. In general to keep in a state of just proportion, in equilibrio. Balance of trade is the equal importing of foreign commodities with the exporting of the native. Balance of power is the exact equipoise of strength and resources between rival nations, formed by alliances and treaties with neighbouring states, in order to keep each other in check, to preserve peace, and to promote the advantage of all. In astronomy, the balances are one of the twelve signs of the zodiac, commonly called Libra.

> Ten thousend mark and mo, that now er in *balance*,
> And I betraised of alle, bi God, that all may auance,
> I salle bring him to stalle, but he make acquitance.
> *R. Brunne*, p. 156.

> If the *balance* of our lives had not one scale of reason to poise another of sensuality, the blood and baseness of our nature would conduct us to most preposterous conclusions. *Shakspeare.*

> I have in equal *balance* justly weigh'd
> What wrong our arms may do, what wrongs we suffer:
> Griefs heavier than our offences. *Id. Henry VI.*

> Comfort arises not from others being miserable, but from this inference upon the *balance*, that we suffer only the lot of nature. *L'Estrange.*

> Upon a fair *balance* of the advantages on either side, it will appear, that the rules of the gospel are more powerful means of conviction than such message.
> *Atterbury.*

Since there is nothing that can offend, I see not why you should *balance* a moment about printing it. *Id. to Pope.*

Little that is truly noble can be expected from one who is ever poring on his cash book, or *balancing* his accounts. *Spectator.*

Though I am very well satisfied, that it is not in my power to *balance* accounts with my Maker, I am resolved, however, to turn all my endeavours that way. *Addison. Id.*

They pass the planets sev'n, and pass the fix'd
And that crystalline sphere whose *balance* weighs
The trepidation talk'd, and that first mov'd. *Milton.*

Were the satisfaction of lust, and the joys of heaven, offered to any one's present possession, he would not *balance*, or err, in the determination of his choice. *Locke.*

Judging is *balancing* an account, and determining on which side the odds lie. *Id.*

Care being taken, that the exportation exceed in value the importation; and then the *balance* of trade must of necessity be returned in coin or bullion. *Bacon's Advice to Villiers.*

Heav'n that hath plac'd this island to give law,
To *balance* Europe, and her states to awe. *Waller*

A balance of power, either without or within a state, is best conceived by considering what the nature of a *balance* is. It supposes three things; first, the part which is held, together with the hand that holds it; and then the two scales, with whatever is weighed therein. *Swift.*

Give him leave
To *balance* the account of Blenheim's day. *Prior.*

Balance, the ancient or Roman, called also the Statera Romana, or steel-yard, consists, as is well known, of a lever or beam, moveable on a centre, and suspended near one of its extremities: the bodies to be weighed are applied on one side of the centre; and their weight is shown by the division marked on the beam, where the weight, which is moveable along the lever, keeps the steel-yard in equilibrio. This balance is still often used in weighing heavy bodies.

Balance, Deceitful, or that which cheats by the inequality of its brachia, is founded on the same principle as the steel-yard. Let there be, for example, a balance so constructed, that both the brachia with their scales shall equiponderate, but that the length of the one arm shall be to that of the other as ten to nine. In this case a weight of nine pounds put into the scale of the longest arm, will counterpoise one of ten pounds put into that of the shorter one: but the cheat is immediately discovered by shifting the weight from one scale to the other: in which case, the balance will no longer remain in equilibrio. The true weight is a geometrical mean proportion between the two false weights.

Balance, Assay, is a very nice balance used in decimastical operations, to determine exactly the weight of minute bodies; see plate Balance, fig. 1. This should be made of the best steel, and of the hardest kind; because that metal is not so easily spoiled with rust as iron; and it is more apt than any other to take a perfect polish, which at the same time prevents the rust. The structure of the assayer's scale is little different from that of common scales, excepting in nicety and smallness. The longer the beam of it is, the more exactly may the weight of a body be found; however, ten or twelve inches are a sufficient length. Let the thickness of it be so little, that two drams may hardly be hung at either of its extremities without its bending; for the largest weight put upon it seldom exceeds one dram. The whole surface of this beam must be altogether without ornaments, which only increase the weight and gather dust, &c. We give in the plate, one made by Fontin of Paris, so delicate, that when charged with a weight of a thousand grammes in each scale, it will turn with the addition of one gramme. LL′ is the beam of the balance, made of the finest steel, and of sufficient dimensions to prevent any sensible deflection in it, with the greatest weights it is proposed to charge it with; the arms are of course of equal length and figure, and the whole is balanced on a knife-edge suspension at C, the plate G being also of polished steel, and rendered as hard as possible, to prevent the action of the knife-edge upon it. In order to relieve the suspension of the balance when the instrument is not in use, the two crotches F F are brought up by the screws shown in the figure, so as just to take off the pressure from the point of support. When the equilibrium is nicely supported, the needle, or index, CS, corresponds very accurately with zero on the graduated arc attached to the top or bottom of the principal stem, and which former, being fixed to the beam, will be displaced by, and indicate any want of due equipoise. The whole apparatus is, when used for nice experiments, enclosed in a case or frame, with glass faces, and which are only opened sufficiently to introduce the weights and body to be weighed. An instrument in its case, with the index pointing downwards, to save room, is shown in the figure.

The method of weighing a body is this:—Place the body, which we may denote B, in one of the scales of the balance; as, for example, in the scale A, to be put in equilibrio, by placing in the other scale A′, bodies of any weight, such as grains of lead, small pieces of copper, or the like; and lastly, small pieces of leaf copper, or paper, till the needle, or index, points exactly to zero on the graduated arc; the beam is then in equilibrio, and the weight in the two scales equal, or very nearly so. Take out now the body B, and replace it by different known weights, till the equilibrium is again obtained; and these weights together, will express the precise weight of the body. This method, it is obvious, is independent of the length of the arms, and even of the quantity of friction on the axis, because the body B, and its equal weights, are placed precisely in like circumstances, which is not the case in the common method of weighing. One thing, however, is here very essential, and must be attended to; viz. not to shake or disturb the apparatus in removing the body from the scale, as this may change a little the point of support, and alter the degree of friction. To prevent this, the crotches F, F′, are brought up to the beam, without removing it from its support; then before the body B is removed, another body, of about half its weight, is added. The former body B is now taken out, and weights, as

BALANCE.

Hydrostatic Balance

Fig.1.
Assay Balance.

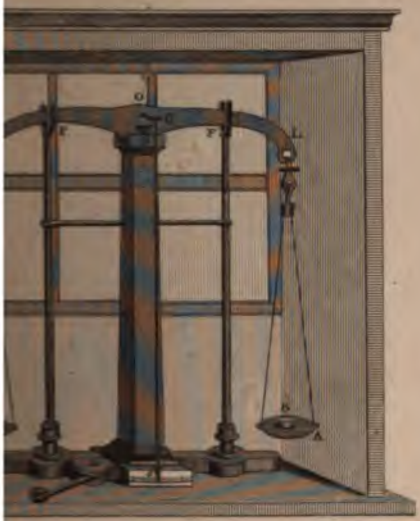
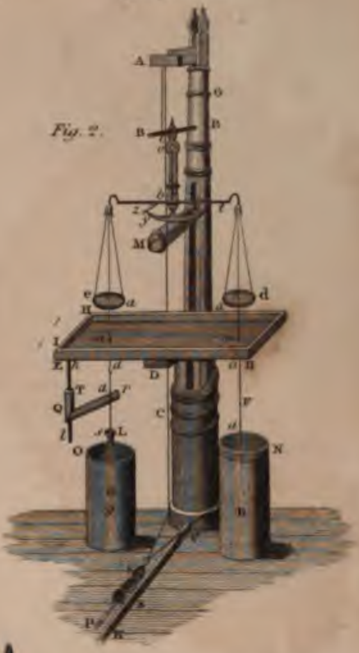


Fig. 2.



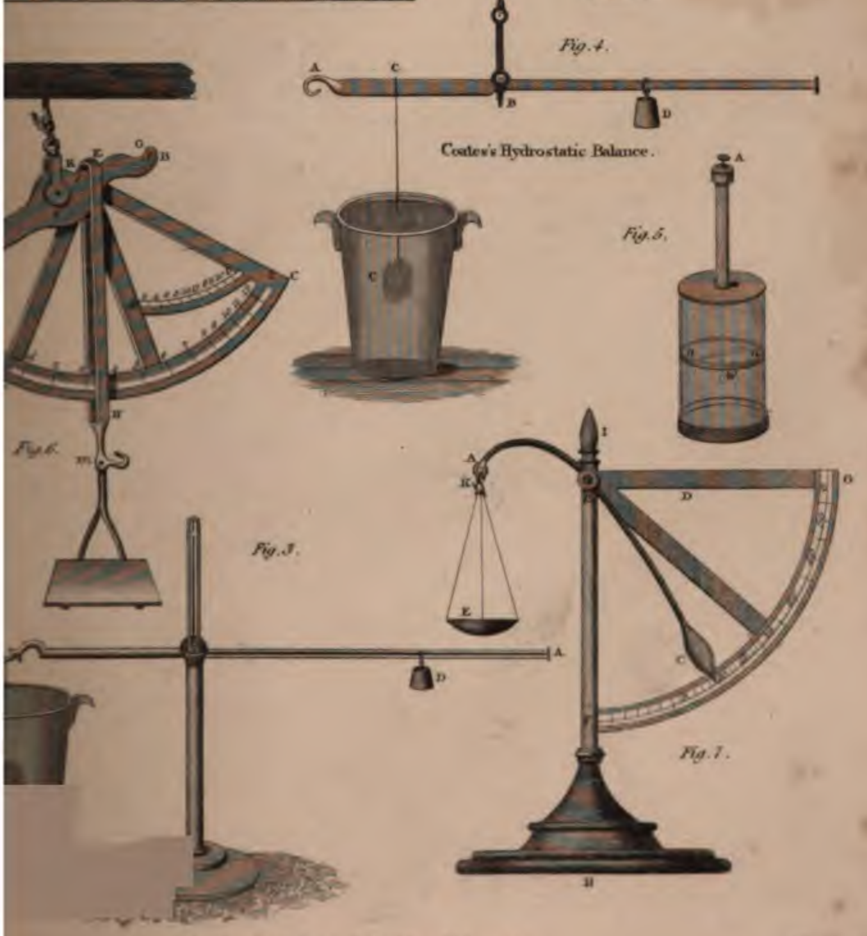


Fig.4.

Coates's Hydrostatic Balance.

Fig.5.

Fig.6.

Fig.3.

Fig.7.

London. Published by T.T.& J.Tegg, 73 Cheapside.

J.Shury sculp.

can be judged equal to it, are put in
the other body is then removed, the
t down, and the balance left on its
pport as at first; and successive small
ded, till the equipoise is perfect.

E, THE BENT LEVER, is represented
Here A B C is a bent lever supported
B in the pillar I H. At A is sus-
e scale E, and at C is affixed a
a heavy knob. Draw the horizontal
through B, the centre of motion, on
A and C let fall the perpendiculars
then if B K and B D are reciprocally
ion to the weights at A and C, they
equilibrio; but if not, the weight C
one way or other along the arc F G,
atio be obtained. If the lever be so
when A coincides with the line G K,
s with the vertical line B H, then as C
ng from F to G, its momentum will
vhilst that of a weight in the scale E
ase; hence, the weights in E corres-
o different positions of the balance,
pressed on the graduated arc of the
the whole being used in the manner
l-yard.

E, THE CHINESE, is a steel-yard some-
rent in its form and application: it is
by the eastern merchants in weighing
precious metals. The beam is a small
od or ivory, about a foot in length:
are three lines of measure made of
studded work, beginning from the
e beam, whence the first is extended
es, the second six and a half, and the
and a half. The first is European
other two Chinese. At the other end
n hangs a round scale; and at three
tances from this end are fastened so
strings at different points of suspen-
first distance makes 1⅔ or ⅝ of an inch;
3⅓ or double the former; and the
r triple the same. When the instru-
ed, it is held up by some one of the
d a sealed weight, of about an ounce
ter, troy, is hung upon some one of the
of the rule, so as to produce an equi-
e weight of the body being indicated
duated scale above referred to.

E, THE DANISH, is a kind of balance
rd, in common use upon various parts
inent of Europe. It consists of a bat-
l wood, having a heavy lump or knob
, and a swivel hook at the other. The
e weighed are suspended on the hook,
hole is carried in a loop of whip-cord,
t is slidden to and fro (when placed
y), till the goods suspended from the
e end are balanced by the knob at the
e weight of the goods is estimated by
t of the loop with a scale of divisions
ic progression.

E, BRADY'S, or WEIGHING APPARATUS.
best modern inventions of the kind is
d in fig. 6. It unites the properties of
ver balance and the steel-yard. A B C
of cast iron, having a great part of its
wards A, where it is thicker than in its
s: F is a fixed fulcrum, and E a moveable suspender, having a scale and hook at its lower extremity; K, E, G, are three distinct places to which the suspender E H may be applied; and to which belong respectively, the three graduated scales of division, or weights, *f* C, *c d*, *a b*. When the scale and suspender are applied at G, the apparatus is in equilibrio, with the edge A B horizontal, and the suspender cuts the zero on the scale *a b*; now a weight being applied, the whole apparatus turns about F, and the part towards B descends, till the equilibrium is again established; when the weight of the body is read off from the scale *a b*, which registers to ounces, and extends to two pounds. If the weight of the body exceeds two pounds, and be less than eleven pounds, the suspender is placed at E, and when the upper edge of the balance is horizontal, the weight or number 2, is found a little to the right of the index of the suspender; if now weights exceeding two pounds be placed in the scale, the whole again turns about F, and the weight of the body is shown on the graduated arc *c d*, which extends to eleven pounds, and registers to every two ounces.

If the weight of the body exceeds eleven pounds the suspender is hung on at K, and the weights are ascertained in the same manner on the scale *f* C to thirty pounds, the subdivisions being on this scale quarters of pounds. The same principles would obviously apply to weights greater or less than the above. To prevent mistake, the three points of support, G, E, K, are numbered 1, 2, 3; and the corresponding arcs are respectively numbered in the same manner. When the hook is used instead of the scale, the latter is turned upwards, there being a joint at *m* for that purpose.

BALANCE, HYDROSTATIC, an instrument contrived to determine accurately the specific gravity of both solid and fluid bodies. It is constructed in various forms. We shall describe that which appears to be the most accurate.—V C G, fig. 2, is the stand or pillar of this hydrostatic balance, which is to be fixed in a table. From the top A, hangs, by two silk strings, the horizontal bar B,B, from which is suspended by a ring *i*, the fine beam of a balance *b*; which is prevented from descending too low on either side by the gently springing piece *t x y z*, fixed on the support M. The harness is annulated at *o*, to show distinctly the perpendicular position of the examen, by the small pointed index fixed above it. The strings by which the balance is suspended, passing over two pullies, one on each side the piece at A, go down to the bottom on the other side, and are hung over the hook at *v*; which hook, by means of a screw P, is moveable about one inch and a quarter backward and forward, and therefore the balance may be raised or depressed so much. But if a greater elevation or depression be required, the sliding piece S, which carries the screw P, is readily moved to any part of the square brass rod V K, and fixed by means of a screw. The motion of the balance being thus adjusted, the rest of the apparatus is as follows:—H H is a small board, fixed upon the piece D, under the scales *d* and *e*, and is moveable up and down in a low slit in the pillar above C, and fastened at any part by a screw behind. From the point in the middle of the bottom of each scale hangs, by a fine hook, a brass wire $a d$ and $a e$. These pass through two holes $m m$ in the table. To the wire $a d$ is suspended a curious cylindric wire, $r s$, perforated at each end for that purpose: this wire $r s$ is covered with paper, graduated by equal divisions, and is above five inches long. In the corner of the board at E, is fixed a brass tube, on which a round wire $h l$ is so adapted as to move neither too tight nor too free, by its flat head I. Upon the lower part of this moves another tube Q, which has sufficient friction to make it remain in any position required: to this is fixed an index T, moving horizontally when the wire $h l$ is turned about, and therefore may be easily set to the graduated wire $r s$. To the lower end of the wire $r s$ hangs a weight L; and to that a wire $p n$, with a small brass ball g, about one-fourth of an inch in diameter. On the other side, to the wire $a c$, hangs a large glass bubble R, by a horse-hair. Let us first suppose the weight L taken away, and the wire $p n$ suspended from S: and, on the other side, let the bubble R be taken away, and the wire F suspended at c, in its room. This weight F we suppose to be sufficient to keep the several parts hanging to the other scale in equilibrium; at the same time that the middle point of the wire $p n$ is at the surface of the water in the vessel O. The wire $p n$ is to be of such a size, that the length of one inch shall weigh four grains. Now it is evident, since brass is eight times heavier than water, that for every inch the wire sinks in the water, it will become half a grain lighter, and half a grain heavier for every inch it rises out of the water: consequently, by sinking two inches below the middle point, or rising two inches above it, the wire will become one grain lighter or heavier. Therefore, if, when the middle point is at the surface of the water in equilibrium, the index T be set to the middle point a of the graduated wire $r s$, and the distance on each side $a r$ and $a s$ contains 100 equal parts; then, if in weighing bodies the weight is required to the 100th part of a grain, it may be easily had by proceeding in the following manner: Let the body to be weighed be placed in the scale d. Put a weight in the scale e, and let this be so determined that one grain more shall be too much, and one grain less too little. Then the balance being moved gently up or down, by the screw P, the equilibrium will be nicely shown at a; if the index T be at the middle point a of the wire $r s$, it shows that the weights put into the scale e are just equal to the weight of the body. By this method we find the absolute weight of the body: the relative weight is found by weighing it hydrostatically in water, as follows: Instead of putting the body into the scale e, as before, let it hang with the weight F, at the hook c, by a horse hair, as at R, supposing the vessel O of water were away. The equilibrium being then made, the index T standing between a and r, at the thirty-sixth division, shows the weight of the body put in to be 109,536 grains. As it thus hangs, let it be immersed in the water of the vessel O, and it will become much lighter; the scale c will descend till the beam of the balance rests on the support z. Then suppose 100 grains put into the scale d restore the equilibrium precisely, so that the index T stands at the thirty-sixth division above a; it is evident that the weight of an equal bulk of water would, in this case, be exactly 100 grains. In a similar manner this balance may be applied to find the specific gravity of liquids, as is easy to conceive.

LUKIN'S HYDROSTATIC BALANCE, an American invention, has the recommendation of simplicity, and is said in the Report of the Committee of the Academy of Sciences at Philadelphia, to be a very accurate instrument. It acts on the principle of the steel-yard; the arms being at equipoise, when unloaded; see fig. III. C is the body whose specific gravity is to be weighed, and it is suspended to the shorter arm of the instrument. On the longer arm A the movable weight D indicates its weight in air or water. When greater accuracy is required, a second weight may be added on the long arm, which ought to be some determinate portion of D. Then, the division marked by the larger weight, will be units, and that of the smaller tenths, or 100ths as it may be contrived.

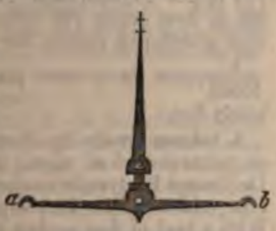
COATES'S HYDROSTATIC BALANCE is also an instrument of American invention, upon the same principles, but differing in the mode of graduation: this being adapted to the purposes of finding the specific gravity of minerals; and therefore, instead of pointing out the actual and relative weights, it shows at once their specific gravity. The instrument is accurately balanced when unloaded, by making the shorter arm much larger than the longer one; and the latter is graduated and marked with numbers, which everywhere show the quotient of the entire length of the longer arm, divided by the distance of the mark from the end: thus, at half the length, is marked the number 2; at one-third the number 3, and so on; which numbers extend on the scale to rather more than twenty, in order to extend the use of the instrument to heavy minerals.

In using it, a weight is suspended by a hook at A, and the body under examination is to be hung by a horse-hair on the shorter arm, and slid along, as on the steel-yard, till an equipoise is obtained, say at D. Then, without altering its situation on the beam, the body is to be immersed in water, and balanced a second time, by sliding the weight C along the graduated arm, till the instrument is found again in equilibrio. The hook of this latter will then at once indicate, by its situation on the scale, the actual specific gravity of the body, water being considered as unity. The instrument being supposed in equilibrio, and B D and the weight of the counterpoise being constant, the weight of the body varies as the distance of the counterpoise from B, by the common principle of the lever.

The BALANCE OF TORSION, fig. V. was invented by M. Coulomb, to estimate minute attracting and repelling forces in electricity, magnetism, &c. It consists of a vertical metallic thread, the upper end of which is attached to a point A, its lower end carrying a small weight w, and a little above it a light horizontal needle, n, n. To ascertain very small forces they are made to act on the extremity of this needle, and their intensity is appreciated by the angle of de-

which they cause in it, so that the forces
anced by the torsion of the wire, and hence
omination. The needle is enclosed in a
linder, to protect it from the action of the
l the thread is enclosed in a smaller cylin-
ed into the brass cover thereof. On the
art of the small cylinder is placed a di-
dial-plate, which, with very little friction,
bout the cylinder. The lever which carries
ad that suspends the horizontal needle,
es this dial, and serves as an indicator,
t is requisite to have the torsion equal to
n number of degrees. A circular division
horizontally about the glass cylinder,
e to the needle, measures the deviations
latter when under excitation. Mr. Caven-
termined the mean density of the earth
nating with this instrument the action of
den balls of known dimensions and spe-
avity; and comparing the effect with that
trial gravity. See *Phil. Trans.* anno. 1798.

BALANCE, COMMON, or MODERN, gene-
ed, consists of a lever or beam suspended
in the middle, having scales or basins
each extremity. The lever is called the
or beam; and the two moieties thereof,
side the axis, the brachia or arms. The
which the beam turns, or which divides
hia, is called the axis; and, when consi-
ith regard to the length of the brachia, is
d a point only, and called the centre of
nce: the handle whereby it is held, or by
e whole apparatus is suspended, is called
; and the
part per-
lar to the
whereby
e equili-
e prepon-
of bodies
cated, is
e tongue
alance.—
the dia-
nexed, *ab* is the beam, divided into
al brachia, or arms, by the white spot
entre, which is the axis or centre of
nce, and *c* is the tongue. The tru-
which the axis is suspended, is not re-
d in this figure, in order to render the
rts more conspicuous. It follows from
been observed, that in the Roman ba-
r steel-yard, the weight used for a coun-
is the same, but the point of application
in the common balance the counterpoise
s, and the point of application the same.
ciple on which each is founded, may be
ly understood from the general proper-
he lever. See LEVER. The beam is a
the first kind; but instead of resting on
n, is suspended by something fastened
ntre of motion: consequently the me-
of the balance depends on the same theo-
the lever. Hence as the quantity of
a known weight is to its distance from
e of motion, so is the distance of the un-
weight to its quantity of matter. The
balance is properly a lever, whose axis
n is formed with an edge like that of a



knife, and the other two dishes, or scales, at its extremities, are hung upon edges of the same kind, which are first made sharp, and then rounded with a fine bone, or a piece of buff leather. On the regular formation of this part, the excellence of the instrument essentially depends. When the lever, or beam of the balance, is considered as a mere line, the two outer edges are called points of suspension, and the inner the fulcrum. The points of suspension are supposed to be at equal distances from the fulcrum, and to be pressed with equal weights when loaded.

And now, observe, 1. If the fulcrum be placed in the centre of gravity of the beam, and the three edges be all in the same right line, the beam of the balance will have no tendency to one position more than another, but will rest in any position in which it may be placed, whether the scales be on or off, empty or loaded. 2. If the centre of gravity of the beam, when level, be immediately above the fulcrum, it will overset by the smallest action; that is, the end which is lowest will descend; and it will do this with the greater velocity, in proportion as the centre of gravity is higher, and the points of suspension are less loaded. 3. But if the centre of gravity of the beam be immediately below the fulcrum, the beam will not rest in any position but when level; and, if disturbed from that position, and then left at liberty, it will vibrate, and at last come to rest in an horizontal position. Its vibrations will be quicker, and its horizontal tendency stronger, the lower the centre of gravity, and the less the weight upon the points of suspension. 4. If the fulcrum be below the line joining the points of suspension, and these be loaded, the beam will overset, unless prevented by the weight of the beam tending to produce an horizontal position, as in the third case. In this case small weights will equilibrate, as in the former; a certain exact weight will rest in any position of the beam, as in the first case; and all greater weights will cause the beam to overset, as in the second. Money scales are often made this way, and will overset with any considerable load. 5. If the fulcrum be above the line joining the points of suspension, the beam will come to the horizontal position, unless prevented by its own weight, as in the second case. If the centre of gravity be nearly in the fulcrum, all the vibrations of the loaded beam will be made in times nearly equal, unless the weights be very small, when they will be slower. The vibrations of balances are quicker, and the horizontal tendency stronger, the higher the fulcrum. Finally, in the proper construction of the common balance, observe, that the points of suspension must be exactly in the same line as the centre of the balance; that they must be precisely equidistant from that centre on either side; and that the brachia must be as long as conveniently they may, in relation to their thickness, and the weight which they are intended to support; that there must be as little friction as possible in the motion of the beam and scales; and, lastly, that the centre of gravity of the beam must be placed a little below the centre of motion.

The equality of the arms of a balance is of use, in scientific pursuits, says Dr. Ure, chiefly in making weights by bisection. A balance with unequal arms will weigh as accurately as another of the same workmanship with equal arms, provided the standard weight itself be first counterpoised, then taken out of the scale, and the thing to be weighed be put into the scale and adjusted against the counterpoise; or when proportional quantities only are considered, as in chemical and in other philosophical experiments, the bodies and products under examination may be weighed against the weights, taking care always to put the weights into the same scale. For then, though the bodies may not be really equal to the weights, yet their proportions among each other may be the same as if they had been accurately so. But though the equality of the arms may be well dispensed with, yet it is indispensably necessary that their relative lengths, whatever they may be, should continue invariable. For this purpose, it is necessary, either that the three edges be all truly parallel, or that the points of suspension and support should be always in the same part of the edge. This last requisite is the most easily obtained. The balances made in London are usually constructed in such a manner, that the bearing parts form notches in the other parts of the edges; so that the scales being set to vibrate, all the parts naturally fall into the same bearing. The balances made in the country have the fulcrum end straight, and confined to one constant bearing by two side plates. But the points of suspension are referred to notches in the edges, like the London balances.

Very delicate balances (continues this able writer) are not only useful in nice experiments, but are likewise much more expeditious than others in common weighing. If a pair of scales with a certain load be barely sensible to one-tenth of a grain, it will require a considerable time to ascertain the weight to that degree of accuracy, because the turn must be observed several times over, and is very small. But if no greater accuracy were required, and scales were used which would turn with the hundredth of a grain, a tenth of a grain, more or less, would make so great a difference in the turn, that it would be seen immediately.

If a balance be found to turn with a certain addition, and is not moved by any smaller weight, a greater sensibility may be given to that balance, by producing a tremulous motion in its parts. Thus, if the edge of a blunt saw, a file, or other similar instrument, be drawn along any part of the case or support of a balance, it will produce a jarring, which will diminish the friction on the moving parts so much, that the turn will be evident with one-third or one-fourth of the addition that would else have been required. In this way, a beam which would barely turn by the addition of one-tenth of a grain, will turn with one-thirtieth or fortieth of a grain.

Muschenbroek, in his Cours de Physique, (French translation, Paris, 1769) tom. ii. p. 247, says, he used an ocular balance of great accuracy, which turned (trebuchoit) with 1-40th of a grain. The substances he weighed were between 200 and 300 grains. His balance, therefore, weighed to the $\frac{1}{12000}$ part of the whole; and would ascertain such weights truly to four places of figures.

In the Philosophical Transactions, vol. lxvi. p. 509, mention is made of two accurate balances of Mr. Bolton; and it is said that one would weigh a pound, and turn with one-tenth of a grain. This, if the pound be avoirdupois, is $\frac{1}{70000}$ of the weight; and shows that the balance could be well depended on to four places of figures, and probably to five. The other weighed half an ounce, and turned with $\frac{1}{100}$ of a grain. This is $\frac{1}{24000}$ of the weight.

In the same volume, p. 511, a balance of Mr. Read's is mentioned, which readily turned with less than one pennyweight when loaded with fifty-five pounds, before the Royal Society; but very distinctly turned with four grains, when tried more patiently. This is about $\frac{1}{96000}$ part of the weight; and therefore this balance may be depended on to five places of figures.

Also, page 576, a balance of Mr. Whitehurst's weighs one pennyweight, and is sensibly affected with $\frac{1}{2000}$ of a grain. This is $\frac{1}{48000}$ part of the weight.

A balance belonging to Mr. Alchorne of the Mint in London, is mentioned, vol. lxxvii. p. 205 of the Philosophical Transactions. It is true to three grains with 15lb. an end. If these were avoirdupois pounds, the weight is known to $\frac{1}{50000}$ part, or to four places of figures, or barely five.

A balance (made by Ramsden, and turning on points instead of edges,) in the possession of Dr. George Fordyce, is mentioned in the seventy-fifth volume of the Philosophical Transactions. With a load of four or five ounces, a difference of one division in the index was made by $\frac{1}{1600}$ of a grain. This is $\frac{1}{384000}$ part of the weight, and consequently this beam will ascertain such weights to five places of figures, beside an estimate figure.

The Royal Society's balance, which was lately made by Ramsden, turns on steel edges, upon planes of polished crystal. 'I was assured,' says Dr. Ure, 'that it ascertained a weight to the seven-millionth part. I was not present at this trial, which must have required great care and patience, as the point of suspension could not have moved over much more than the 2-100th of an inch in the first half minute; but, from some trials which I saw, I think it probable that it may be used in general practice to determine weights to five places and better.

Balance, in ichthyology, or the balance fish. See Squalus.

Balance, in the woollen manufacture, a machine invented by the Rev. W. Ludlam. The thread is made into skeins of the same length; and the fineness of it is denominated from the

ef skeins which go to a pound; the
being about twelve to the pound, and
t nearly sixty. This machine is designed
hing skeins, in order to determine their
ve fineness. It resembles the beam of a
pair of scales; at one end of it is fixed
, called the counterpoise, and at the other
ok; in sorting, the skein to be examined
pon the hook, and sinks down more or
rding to its weight, till the counterpoise,
, balances it: and then the index or
the beam, points out on a gradual arch,
ber of skeins of that sort which go to
d.

ALANCE OF A CLOCK or WATCH, is that
ch regulates the beats. The circular part
lance is called the rim, and its spindle
e; there belong to it also two pallets or
t play in the fangs of the crown-wheel:
t watches, that strong stud in which the
vot of the verge plays, and in the middle
one pivot of the crown-wheel runs, is
e potence: the wrought piece which
e balance, and in which the upper pivot
alance plays, is the cock; and the small
the new pocket watches is called the
. The motion of a balance, as well as
a pendulum, being alternate, while the
of the wheels is constantly in one di-
t is obvious that some art must be used
modate the one to the other. When the
he wheel has given the balance a motion
rection, it must quit it, that it may get
sion in the opposite direction. The ba-
pendulum thus escaping from the tooth
eel, or the tooth escaping from the ba-
as given to the general construction
of scapement.

the invention of the pendulum, clocks
ulated by an horizontal balance, having
axis, that passed through two holes,
rty to play up and down; and that sus-
y means of a string passed through a
e axis and fastened at both ends, so as
qual angles with the axis itself. Con-
, when the balance revolved in one di-
the string was wound upon the verge,
g thus shortened, raised it up until the
the balance had overcome the force of
after which it revolved the contrary
descended to perform a similar ascent
ng the string the opposite way.

posed BALANCE OF POWER, in the poli-
em, originates from, and is maintained
lliances of different nations, as their cir-
es and interest may require. The pre-
of the balance of power has generally
he maintaining of such a degree of equa-
g the powers of Europe, in general, as
vent any enormous accumulation of
r any attempt at universal monarchy,
rt of any one of them. To preserve this
much blood has been shed, and money
ce the revolution of 1688; but the re-
of France, and the wars arising out of
opelessly deranged all former theorems
lations upon this subject. Robertson
historians have said, that the principle
lance of power was a discovery of the fifteenth century, made by the Italian politicians on the invasion of Charles VIII. Against such statements we might adduce the arguments of Hume and others, who have traced in ancient times vastly more refined notions of policy than any that dictated the Italian defensive league. It was not, in truth, to any such single event that the balancing system owed either its origin, or its refinement; but to the progress of society, which placed the whole states of Europe in the same relative situation in which the states of Italy were at that period; and taught them not to wait for an actual invasion, but to see a Charles at all times in every prince or commonwealth that should manifest the least desire of change. See *Edinburgh Review*, vol. I. p. 354.

BALANCE OF TRADE That which is commonly meant by the balance of trade, is the relative quantity of foreign commodities compared with the exportation of home productions or manufactures. And it has been reckoned that the nation which exports most of its own commodities, has the advantage of the balance of trade. The reason is, that, if its own commodities be of a greater value than are imported, the balance of that account must be made up in bullion or money; and the nation grows so much richer, as the balance of that account amounts to. But this reasoning admits of many qualifications. See COMMERCE and ECONOMY, POLITICAL.

BALANCERS, or POIZERS, in entomology, (in French, balanciers, and the halteres of Linnæus), denoting those little filamentous bodies which terminate in a round, truncated, or oval capitulum, or knob; and of which one is placed on each side of all the dipterous or two-winged insects, under a small scale below the wing. In different genera these vary a little in respect of situation, and are also of larger or smaller size, in proportion to the other parts of the insect, in different kinds.

BALANCIER, a machine used in the striking of coins, medals, counters, and the like. See COINAGE.

BALANCING, among seamen, the contracting a sail into a narrower compass, in a storm, by retrenching or folding up a part of it at one corner: this method is used in contradistinction to reefing, which is common to all the principal sails; whereas balancing is peculiar to few, such as the mizen of a ship, and the main-sail of those vessels wherein it is extended by a boom. See BOOM and REEF. The balance of the mizen is thus performed: the mizen yard is lowered a little, then a small portion of sail is rolled up at the peek or upper corner, and fastened to the yard about one-fifth inward from the outer end or yard-arm, toward the mast. See MIZEN. A boom main-sail is balanced, after all its reefs are taken in, by rolling up a similar portion of the hindmost or aftmost lower corner. called the clue, and fastening it strongly to the boom, having previously wrapped a piece of old canvass round the part (which is done in both cases) to prevent the sail from being fretted by the cord which fastens it.

BALANITES, in natural history, a name given by the ancients to a stone, seeming to have been of the semipellucid gems. They describe two species of it; the one yellow, and the other green, but each having veins of a flame color. Their descriptions are too short for us to ascertain what stone, among those known at this time, they meant. Some suppose it to have been the lapis judaicus, on account of its acorn-like figure and size.

BALANOIDES, in conchology, a species of lepas, with a conic truncated smooth shell, and obtuse operculum. Linn. Fn. Suec. Donov. &c. This is balanus parvus vulgaris of Petiver; and a variety of it with a long tubular stalk is described by Da Costa, Pennant, and Donov. Brit. Shells. Dr. Leach includes the whole of this species, with additional ones, in his class corrhipedes.

BALANUS, βαλανος, in anatomy, is used for the glans penis, and sometimes for the clitoris.

BALANUS MYREPSICA, in the materia medica, the oily acorn. The whole nut is of a purging quality; and the dry pressing or powder, after the oil is taken out is of a cleansing and drying nature.

BALAO, a river of the province of Guayaquil, in the kingdom of Quito, which runs into the sea, in the gulf of that name.

BALASFALVA, or BLASENBURG, a town of Transylvania, in the county of Kockelburg, at the conflux of the Great and Little Kockel, having a castle, and being the residence of a bishop of the united Greek church of Wallachians.

BALASORE, a sea-port of Asia, on the north-west of the bay of Bengal, four miles from the sea by land, but twenty by the windings of its river, the Booree Bellaun, which produces plenty of fish. It is navigable for vessels of 100 tons. Here the pilot of Calcutta waits the arrival of vessels: and the English, Dutch, and Portuguese all had factories here in the seventeenth century; it was ceded to the Mahrattas in 1751, but in 1803 given up by the Nagpore Rajah to the English. Balasore is in the province of Orissa, 110 miles south-west from Calcutta.

BALATITI, in natural history, a name given by the people of the Philippine islands to a species of birds, by the flight of which they divine the event of things.

BALATON, a lake of Hungary, between the counties of Szalad, Wesprim, and Schumeg, five miles south of Stuhl-Weissenburg. It is nearly 40 miles long, and from one to four broad, formed originally by the river Szala, and augmented by a number of other streams. The water, it is said, may be preserved for nearly two years without putrefaction. It contains some fish as well as birds of rare occurrence, which are bought up for exportation. The Austrian government have lately projected an union between this lake and the Danube, by a canal, but the works proceed slowly.

BALATOV, or BALASCHEV, the capital of a circle in the government of Saratov, in European Russia. To the north are extensive forests, and to the south almost interminable heaths, or steppes. It is situated on the Khoper, which falls into the Don. Ninety miles west of Saratov, and 634 south-east of St. Petersburgh.

BALAUSTIA, or BALAUSTINES; from βαλαυστιον, in pharmacy, the flowers of the wild pomegranate, which are very rough to the tongue and palate, and very astringent; on that accou are frequently used in diarrhœas, hernias

BALAUSTINES in botany. See PUNICA

BALAYAN, a province of Manilla, ne city of Manilla, and extending along the c the east side of the island, a little beyo bay of Batangas. There were former mines in it, but they have been long sinc doned.

BALBASTRO, a town of Arragon, in near the junction of the Vero and Cinca, a population of 5000, and a dependent j tion of 170 parishes. Tanning is the chi suit here. Thirty miles E. N.E. of Saragos 47 north-west of Barcelona.

BALBEC, or BAALBECK, a city of Syria, anciently Heliopolis, and called Arabians, The Wonder of Syria. It is s at the foot of Anti-Libanus, on the where the mountain terminates in the thirty-seven miles north of Damascus. velling to it from the south, it is seen only distance of a league and a half, behind a of walnut-trees, over the verdant tops of appears a white edging of domes and mi It has a ruined wall, flanked with square which ascends the declivity to the right. low wall permits a view of those void and heaps of ruins which are the invarial pendages of every Turkish city; but wha cipally attracts attention is a large edifice left, whose lofty walls and rich columns de it as having been amongst the most splen ancient temples. The apparent length edifice was about 900 feet, and its widt The entrance to the pronaos, or portico, a row of twelve columns, flanked by wi namented with pilasters. It was approac a magnificent flight of steps, of which th but few remains. The interior of the po choked up with heaps of ruins, but these surmounted, lead to an hexagonal court feet diameter, strewed with broken shafts lumns, mutilated capitals, wrecks of pi bases, and other architectural and scu fragments. The buildings in this and t joining court appear to have been appro for academies and lodgings for the Through an opening at the end of this co vast perspective of ruins, which are best from the top of a slope that was formerly case, which communicates with a rect court, 350 feet long and 346 wide. At of the court are six enormous columns; the left is another row of columns which the peristyle to the body of the temple buildings to the right and left form a sort lery, which is divided into seven parts, of the great wings or lateral buildings. extremity of this court is the cell or body temple itself, where are the before-mentio colossal columns. Their shafts measure two feet in circumference, and fifty-ei height; and the whole height of the ord Corinthian) nearly seventy-two feet. amining the circumjacent site, a row o was discovered, arranged in a parallel matic form of 270 feet in length, and width. This belt of columns encompas body of the temple, which was decastyle umned) in front, with nineteen columns , and of the fourth or peripteral order of ; but its intercolumniations do not ac- th any of the five species described in em of Vitruvius. These buildings are all Corinthian order, with the exception of lastral elevations, which are of the Com-

A second temple is situated near the st part of the city, upon an irregular t is pseudodipteral, and does not appear been surrounded by a peristyle and court former. It is, however, in a better state of tion, having very lately eight columns in nd thirteen in flank, of the Corinthian Their shafts are about sixteen feet in cir- nce, and forty-four in height.

c also possesses, in the southern part ty, a circular temple, differing in every re- m the precepts of Vitruvius: its lower used for a Greek church. Its plan is y whimsical, and all its details present a architectural anomalies.

architectural remains of the ancient re more rich in decoration than those of The soffites and ceilings of the pe- re panelled in lozenge forms, with repre- ns of Jupiter and his eagle, Leda and , Diana with her bow and crescent, and busts in the costume of emperors and es. All the members of the interior en- es are loaded with a profusion of orna- The archivolts, the heads of the niches, ze of the principal order, are covered e most sumptuous embellishments of e. The interior columns are all fluted, se of the exterior plain. Dr. Pococke es that nothing can be finer than the en- o the great temple. Almost all the mem- enriched with sculptural representations ers and fruit, and the frieze with ears of f admirable execution. According to the walls of the smaller temple suffered rom the earthquake of 1759; which is ed by our countryman, who, in 1784, ut six columns of the great temple stand- of the nine, which were erect in 1751; nty only out of twenty-nine belonging to ller temple. The rapacity of the Turks o contributed to their destruction, from esire of possessing the iron pins and with which the huge blocks of masonry ed.

massiveness, indeed, of the stones and of marble is not the least remarkable fea- these ruins. No modern mechanical nce, it is said, could convey such masses ny distance into their present positions. from twenty-eight to thirty-five feet long, e in depth, form the second layer of the mple. One is even fifty-nine feet long lve deep.

period of the erection of these edifices o be a question lost in entire obscurity. of Aurelian, from the similarity of their th that of the Palmyra edifices, would be the most probable. Here is the same nd of Grecian forms with Asiatic adorn- nd luxuriant display, the same fantastical ornaments, united with occasional grandeur of design and boldness of execution.

The town now inhabited is small and mean, but about four miles in circuit. The population has been for a long period gradually decreasing. the town was computed, in 1751, to contain 5000, and in 1784, to contain only 1200 poor and indolent inhabitants, cultivating a little cotton, maize, and water-melons, for their subsistence. History has preserved but few traces of this place. About 140 years before the time of Antoninus Pius, it was garrisoned by Roman troops. Some writers state that he erected the principal part of the present edifice on the site of one more ancient. Under Constantine it was neglected, and the great temple soon after converted into a church: thus it was appropriated until the irruption of the Arabs, when it fell rapidly into decay. After a vigorous defence, the town was taken by that nation, under Abu Obeidah, a commander of the caliph Omar. In 1401 it was taken by Tamerlane. An earthquake, in 1759, nearly completed its destruction. Distant forty miles N.N.W. of Damascus, and 110 S. of Aleppo.

BALBINUS, Decimus Cœlius, emperor of Rome, was elected by the senate, A. D. 237, but massacred, along with his colleague, Maximus, soldiers.

BALBO (Vasco Nuñes de), a Castilian; a celebrated navigator, and one of the first discoverers of South America. He was beheaded by the Spanish govenor of St Mary, through jealous of his growing reputation, in 1517, aged forty-two.

BALBU'CINATE, *v. n.* From Lat. *balbutio*, to stammer in speaking. *Dict.*

BALBUL, in ornithology, a species of Anas, or duck having a black beak, and spot on the wing, above obliquely green, beneath obliquely black. Forsk. Fn. Arab.

BALBUS (Lucius Cornelius Theophanes), was born at Cadiz, and distinguished himself by his valor in the war carried on by the Romans in Spain against Sertorius and the Lusitanians, on which account Pompey gave him the privileges of a Roman citizen. He was consul in the 714th year of Rome, and was the first foreigner on whom that dignity was conferred. He was the friend of Pompey, Cæsar, Crassus, and Cicero.

BALBUSARDUS, in ornithology, the name used by authors, for the bird called in English the bald buzzard. It is of the long-winged hawk kind, and has been described by Aldrovandus and some other authors, under the name of the Haliætus and Morphnus, two species of the eagle. It frequents the shores of ponds and rivers, and sometimes of the sea, where it preys on fish. It builds on the ground among reeds, and lays three or four large white eggs, nearly as big as hens' eggs.

BALBU'TIATE, *v. n.* The same with *balbucinate*.

BALCAIRN, a place in Perthshire, in the parish of Clunie, which some antiquarians suppose to have been the scene of the decisive battle between Agricola and Galgacus.

BALCANQUAL (Walter), an eminent Scottish divine, who attended James I. to England, and at Oxford took the degree of D.D. He became his majesty's chaplain, master of the Savoy, and representative of the church of Scotland, at the synod of Dort. He was appointed dean of Rochester in 1625, and of Durham in 1639. During the rebellion he underwent many hardships, being obliged to fly from place to place. He died on Christmas day, 1645, at Chirk castle in Denbighshire; he wrote, Epistles concerning the Synod of Dort, and the Declaration of King Charles I. concerning the late tumults in Scotland, folio, 1630.

BALCARRA, a town of Ireland, in the county of Mayo, 115 miles from Dublin.

BALCARRY, a free port on the west coast of Scotland, in the Stewartry of Galloway, and parish of Rerwick. It is naturally a safe and commodious harbour.

BALCHRISTIE; Gael. *i. e.* the town of Christian; a village of Fifeshire, in the parish of Newburn, anciently given to the Culdees, by king Malcolm III. and his queen St. Margaret. Tradition reports that the first Christian church in Scotland was built in this village.

BALCK, a town of Usbeck Tartary, on the frontiers of Persia, 200 miles south of Bokhara.

BALCLUITHA, a settlement in the south part of Kentucky, on the west side of Big Sandy river.

BALCO'NY, *n. s.* Fr. *balcon;* Ital. *balcone,* a frame of iron, wood, or stone, before the window of a room.

Then pleasure came, who, liking not the fashion,
Began to make *balconies,* terraces,
Till she had weaken'd all by alteration. *Herbert.*

When dirty waters from *balconies* drop,
And dext'rous damsels twirl the sprinkling mop.
Gay.

BALCONY in a ship, denotes a gallery either covered or open, made abaft, either for ornament or convenience of the captain's cabin.

BALD', *adj.* } Welch *bal,* wanting hair.
BALD'LY, *adv.* } A bare surface which is
BALD'NESS, *n. s.* } usually covered or fledged
by nature. In the human species this is usually the effect of time, vexation, fever, or cutaneous disease of the parts, or, as some say, the dryness of the brain. It is figuratively employed to denote whatever is inelegant and meagre of thought, in literary composition or verbal discourse; whatever is mean, undignified and valueless, in character and disposition.

Come hither goodman *bald* pate. Do you know me?
Shakspeare.

Why you *bald* pated lying rascal, you must be hooded must you! *Id.*

Under an oak, whose boughs were moss'd with age,
And high top *bald* with dry antiquity. *Id.*

This *bald* unjointed chat of his, my lord,
I answered indirectly. *Id.*

What should the people do with these *bald* tribunes?
On whom depending, their obedience fails
To th' greater bench. *Id.*

He should imitate Cæsar, who, because his head was *bald,* covered that defect with laurels. *Addison.*

Hobbes, in the preface to his own *bald* translation, begins the praise of Homer where he should have ended it. *Dryden's Fables, Preface.*

And that, though labour'd, line, must *bald* appear,
That brings ungrateful musick to the ear. *Creech.*

BALDNESS occurs chiefly on the sinciput. It differs from alopecia, acea, ophiasis, and tinea, as these all arise from some vices in the nutritious humor; baldness, from the defect of it. When the eye-lids shed their hair, it is called a ptilosis. Among the causes of baldness, immoderate venery is reputed one of the chief: old age usually brings it on of course; and it frequently results from violent fevers. Eunuchs and women are almost always free from it, and Aristotle says that it never can precede the age of puberty. Herodotus, iii. 12, says the Egyptians seldom went bald, because they shaved their heads from childhood, and thus hardened them in the sun! Calvus (bald), among the Romans, was a term of reproach. Thus Juvenal calls Domitian, calvus Nero. The later Romans, however, seem to have been reconciled to baldness; for we find among them a kind of officers, or servants, called glabratores or glabrari, whose business was to take off the hair from all parts, even from the head. In an ancient inscription there is mention made of one Diophantus, TI. CÆSARIS ORNATOR GLABR. that is, Ornator Glabrarius. We have seen it somewhere observed that the majority of Englishmen, above forty, are more or less bald. Buffon observes that the crown of the head, and the space immediately above the temples, are the parts which first become bald; but that the hair below the temples, and on the inferior part of the back of the head, seldom falls off. He also adds, that baldness is peculiar to men. In its early stages nutritives, particularly a tea made of abrotonum, southernwood, have been advised to be applied to the roots of the hair.

BALDACANIFER, or BALCANIFER, a standard-bearer; chiefly in the ancient order of knights Templars.

BAL'DACHIN, *n. s.* Ital. *baldachino,* a piece of architecture, in form of a canopy, supported with columns, and serving as a covering to an altar. It properly signifies a rich silk, *Du Cange,* and was a canopy carried over the host.

BALDACHIN, BALDAKIN, BALDEKIN, or BAULDEKIN, in middle-age writers, a rich kind of cloth made of gold warp and silk woof, variously figured. It took the denomination from its being formerly brought into these countries from Baldacio, or Babylon.

BALD-BUZZARD, in ornithology, the name given by Willoughby and others to the Falco Haliaëtos, or Osprey. It is the balbuzzard of Buffon. See BALBUSARDUS.

BALD EAGLE, or Sinking-Spring Valley, lies upon the frontiers of Bedford county, in Pennsylvania, about 200 miles west of Philadelphia. It is bounded on the east by a chain of high rugged mountains, called the Canoe ridge; and on the west by the Bald Eagle, or Warrior mountains, and is a pleasant vale, having a limestone bottom, about five miles wide; its vicinity abounds with lead-ore, and shows signs of pit coal. The curiosity of this place is the swallows, which absorb several of the largest streams of the valley, and after conveying them several miles under ground, return them again to the surface. Hence its name of Sinking-Spring Valley. The most remarkable of these is called the Ar

which run close upon the road from the
the fort; being a deep hollow formed in
stone rock, about thirty feet wide, covered
tony arch, and giving passage to a fine
of water, which enters the mouth of a
cave, whose exterior aperture is sufficient
t a shallop with her sails full spread.
iidst of this cave, from eighteen to twenty
e, are timber, bodies and branches of
c. which, being lodged up to the roof of
age, show that the water rises to the top
reshes. The cave, extending about forty
idens into a large kind of room, at the
of which is a vortex, where the water
whirlpool, and absorbs pieces of float-
ber, which are instantly conveyed out
t. From the top of the Bald-eagle
ns is a fine prospect of those of the
ny.

Eagle, a river of the United States
ins forty-four miles north-west, and falls
Susquehanna.

Eagle Creek, a head water of the

DERDASH, *n. s.* & *v. a.* Probably of
ld, bold, and *dash*, to mingle; any thing
l together without judgment; rude mix-
confused discourse. The verb is derived
e noun, and signifies to mix or adulterate
ior. Balderdash, in its primary sense,
y signified the froth or foam made by
in dashing their balls backwards and
s in hot water.

> would no more live under the yoke of the
> have their heads washed with his bubbly
> r barbers *balderdash*. *Nashe, Lenten stuffe.*
>
> s against my freehold, my inheritance,
> nk such *balderdash*, or bonny clabber!
> *Ben Jonson.*
>
> Wine is such a drench of *balderdash*.
> *Beaumont and Fletcher.*

Head, an island at the mouth of Cape
er, North Carolina. A light-house was
here in December 1794; four miles
V. of Cape Fear.

Head, the south-west part of West Bay,
istrict of Maine.

Head, a point on the north-western shore
rica, in Norton sound. Long. 198° 18′
64° 43′ N.

Head, a promontory of New Holland,
00 feet high, on the south-west coast, at
th of King George's sound. Branches
appearing through the surface of the top,
ven rise to a conjecture that this promon-
erged from the sea. Long. 118° E.,
6′ S.

DI (Bernard), an Italian mathematician
t, born at Urbino in 1553. He studied
a and afterwards became mathematician
duke of Guastalla. He wrote several
t poems in the Italian language, and
d the works of various ancient mathe-
s into that language. He died in 1617.
es of Mathematicians were printed in

DINI (John Anthony), an Italian noble-
rn at Placentia, in 1654 He was a man of great learning, and employed as ambassador at different courts of Europe. He was also at the congress of Utrecht. He made a large collection of curiosities and books; a catalogue of which was printed in the Italian Literary Journal. He died in 1725.

BALDINUCCI (Philip), of Florence; a connoisseur in the polite arts, and the continuator of Vasari's lives of the painters. He died in 1696, aged seventy-two.

Bald Island, an island off Mount Gardner, on the south-west coast of New Holland, about two miles long. Long. 18° 29′ E., lat. 34° 55′ S.

BALDIVIA, or Valdivia, a sea-port town of Chili in South America. It is situated between the rivers Callaculles and Portero, where they fall into the South Sea, and was built in 1551 by the Spanish general Valdivia, from whom it takes its name. In 1643 it was taken by the Dutch, who would probably have maintained their conquest against all the power of the Spanish viceroy, had they not been obliged to relinquish it through sickness and famine.

BALD'MONY, *n. s.* Gentian; a plant.

BALDO Monte, a mountain of Italy, the highest in the Veronese. It is situated at the head of lake Garda, and is famous for its rare plants. Sea shells are found upon the top of it.

BALDOCK, a market-town and parish of Herts, eight miles south from Biggleswade, and thirty-seven north from London; containing 1600 inhabitants. It is a neat, pleasant place, originally built by the knights-templars, in the reign of Stephen, and stands on the old Roman road, Ikening street, and the present great north road. The church is large and handsome, with three chancels. There is a well-endowed alms-house, and several excellent charities in this parish. Market on Thursday. The chief articles of trade are corn and malt.

Baldock (Ralph de), bishop of London under Edward I. and II., was educated at Mertons college in Oxford; became dean of St. Paul's; was afterwards promoted to the see of London; and at last was made lord high chancellor of England. He had a very amiable character both for morals and learning; and wrote Historia Anglica, or an history of the British affairs, down to his own time, and a Collection of the Statutes and Constitutions of the church of St. Paul. He died at Stepney, July 24, 1313.

Bald-Pate, in zoology, a name given by Ray to the columba leucocephala.

BALDRED; Sax. from bald, bold, and rede, counsel; the last king of Kent.

BALD'RICK, *n. s.* It was formerly written *baudrick*, and signified a belt of leather, from the old French *baudrier*, derived from the verb *baudroyer*, to dress skins. It is now used to signify a girdle, a bracelet, and has been applied to the zodiac.

> Athwart his breast a *baldrick* braue he ware,
> That shin'd like twinkling stars, with stones most
> precious rare. *Spenser.*
>
> That like the twins of Jove, they seem'd in sight,
> Which deck the *baldrick* of the heavens bright. *Id.*
>
> That a woman conceived me, I thank her; that she brought me up, I likewise give her most humble

thanks: but that I will have a recheat winded in my forehead, or hang my bugle in an invisible *baldrick*, all women shall pardon me. *Shakspeare.*

A radiant *baldrick* o'er his shoulders ty'd,
Sustain'd the sword that glitter'd at his side. *Pope.*

Baldrick was a belt worn by the Saxons, hanging from the shoulder across the breast, on which the sword was hung.

BALDWIN, archbishop of Canterbury, was born of obscure parents at Exeter, where, in the early part of his life, he taught a grammar school; after which he took orders and was made archdeacon of Exeter; but resigned and became a Cistertian monk in the monastery of Ford in Devonshire, of which in a few years he was made abbot. In 1180 he was consecrated bishop of Worcester. In 1184 he was promoted to the see of Canterbury by pope Lucius III., and by his successor Urban III. was appointed legate. In 1189 he crowned king Richard I. at Westminster; and soon after followed that prince to the holy land, where he died at the siege of Ptolemais. He wrote various tracts on religious subjects, which were collected and published by Bertrand Tissier in 1662.

Baldwin I. earl of Flanders, was proclaimed emperor of Constantinople, A. D. 1204, in opposition to Theodore Lascaris, but enjoyed his new dignity little more than a year. He was succeeded by his brother Henry, who took Constantinople in 1206.

Baldwin II., emperor of Constantinople, succeeded Robert the fourth Latin emperor A. D. 1229, and reigned thirty-three years; but was expelled by Michael VIII., who recovered Constantinople, and thus put an end to the empire of the Latins in the east, A. D. 1261.

Baldwin (Francis), a learned civilian, born at Arras, in 1520. He is said to have changed his religion four different times, from the Protestant to the Catholic faith, and vice versa. He however obtained successively the patronage of the emperor Charles V. Anthony king of Navarre, and Henry III. king of Poland; the latter of whom having invited him to his court, he was making preparations for his journey, when he was seized with a fever, of which he died in 1572. He wrote Leges de Rustica; Novella Constitutio prima; de Hæredibus et Lege Flacidia; and other works.

Baldwin I. king of Jerusalem, was the son of Eustace, count of Boulogne. Having accompanied his brother Godfrey into Palestine, he there obtained the country of Edessa. He ascended the throne of Jerusalem as his brother's successor in 1100, and next year took Antipatris, Cesarea, and Azotus; and Acre, after a long siege, in 1104. He died in 1118, and was interred on Mount Calvary. He was an active and enterprising prince.

Baldwin II. son of Hugh, count of Rethel, succeeded to the throne in 1118, after Eustace, the brother of Baldwin I. had given up all claim to it. In 1120 he gained a great victory over the Saracens, but was made prisoner by them in 1124; and gave up the city of Tyre to obtain his liberty. He died in 1131.

Baldwin III. IV. and V. were also kings of Jerusalem in the latter part of the twelfth century; the last of this name being poisoned, it was thought, by his mother, in 1186.

BA'LE, *n. s. v. n.* & *v. a.* Fr. *emballer*; Ital. *imballare*, a bundle or parcel packed up for carriage; a pair of dice. To make up into a parcel. As used by sailors, it is distinguished from pumping, and signifies to lave out water from hand to hand; from the French *bailler*.

One hired an ass in the dog-days, to carry certain *bales* of goods to such a town. *L'Estrange.*

It is part of the *bales* in which bohea tea was brought over from China. *Woodward.*

It is a false dice of the same *bale*, but not the same cut. *Overbury.* Charac. sign. Q. 2.

For exercise of arms a *bale* of dice.
Ben Jonson, New Inn.

BALE', *n. s.* } Sax. bæl; Dan. *bale*;
Bale'ful, *adj.* } Icelandic *bal*, *bol*; Cimb.
Bale'fully, *adv.* } *baul*; Sax. bealoꝼull. Misery, calamity, mischief, poison, its genuine meaning.

And I salle telle that tale, or I ferrer go,
Now falsnes brewes *bale* with him, and many mo.
R. Brunne, p. 55.

She look'd about, and seeing one in mail
Armed to point, sought back to turn again;
For light she hated as the deadly *bale*.
Faerie Queene.

But when he saw his threat'ning was but vain,
He turn'd about, and search'd his *baleful* books again.
Id.

Thenceforth they playne, and make full piteous mone
Unto the author of their *balefull* bane. *Spenser.*

Such stormie stoures do breed my *balefull* smart,
As if my yeare were wast and woxen old. *Id.*

Boiling choler chokes,
By sight of these, our *baleful* enemies.
Shakspeare.

Round he throws his *baleful* eyes,
That witness'd huge affliction and dismay,
Mix'd with obdurate pride and stedfast hate.
Milton.

Unseen, unfelt, the fiery serpent skims
Betwixt her linen and her naked limbs,
His *baleful* breath inspiring as he glides.
Dryden.

Happy Ierne, whose most wholesome air
Poisons envenom'd spiders, and forbids
The *baleful* toad and vipers from her shore.
Philips.

Bale, in commerce, is particularly applied to a quantity of packed up merchandise, well secured for carriage or voyages. To sell goods in the bale is to sell them in the lump, on showing a specimen, without unpacking or taking off the cordage. Thus the East India Company and others sell their goods. In the East India trade, the bulky goods are salt-petre, pepper, red earth, tea, &c. Bale goods stand opposed to [illegible] goods.

A **Bale** of camlet, at Smyrna, is called a [illegible], on account of its flat square.

A **Bale** of cotton yarn is from 300 to 400 weight.

A **Bale** of dice denotes a little packet of paper, containing some dozens of dice.

A **Bale** of dowlas, or of lockram, contains either three, three and a half, or four pieces.

A **Bale** of paper denotes a certain, or rather uncertain number of reams packed together

Those sent from Marseilles to Con-
e usually contain twelve reams. A
lon of crown paper, manufactured in the
ts of the Var, the Lower Alps, and the
the Rhone, consists of fourteen reams.
of raw silk contains from 100 to
t.

John), bishop of Ossory in Ireland,
at Cove, in Suffolk, in 1495. At
ars of age he was entered in the mo-
the Carmelites, Norwich. He was
Roman Catholic; but, being converted
testant religion by Thomas Lord Went-
the death of Lord Cromwell, who pro-
n from the Romish clergy, he was
retire into the Low Countries, where
ed eight years. Soon after the acces-
dward VI. he was recalled; and being
nted to the living of Bishop's Stoke
hire, in 1552, was nominated to the
ory. During his residence in Ireland
markably assiduous in propagating the
doctrines; but frequently at the hazard
e. Once five of his domestics were
as he would probably have been, had
overeign of Kilkenny come to his as-
ith 100 horse and 300 foot. On the
of queen Mary, the tide of opposition
powerful, that he embarked for Hol-
was very unfortunate in his escape.
as taken by a Dutch man of war, and
all his effects. Then, being forced by
weather into St. Ive's in Cornwall, he
ed on suspicion of treason. Being re-
r a few days confinement, the ship
in Dover road, where he was again
a false accusation. After his arrival in
he was kept prisoner for three weeks,
gth obtained his liberty on paying £30.
lland he travelled to Basil in Switzer-
re he continued till queen Elizabeth
the throne. After his return to
he was, in 1560, made prebendary of
y, not choosing to return to his former
olves. He died in November 1563, at
y, aged sixty-eight. He was so severe
against the church of Rome, that his
particularly prohibited in the expurga-
, published at Madrid in 1667. Most
itings are attacks upon the religion he
loned. His Brief Chronicle concerning
Oldcastle was republished in 1729;
also the author of many strange pro-
in English metre, among which are
lays on sacred subjects, a specimen of
y be seen in the Harleian Miscellany.
n readers they would appear strange
s; but, as the author himself informs
vere gravely and piously represented in
lays by young men at the market-cross
ny. The principal work of bishop
is Scriptorum Illustrium Majoris Bri-
talogus; or, An Account of the Lives
t Writers of Britain; which, according
e, commences with Japhet the son of
reaches to the year 1557! It formed
ation of all the large subsequent com-
of this kind.

Basle or Basil. See Basle.

BALEARES Insulæ, or Balearic Islands, islands in the Mediterranean, so called from Βαλλειν, because the inhabitants were excellent slingers. But Bochart makes the name of Punic or Phœnician original, as were the people: Baal-jare, signifying a master, or skilful at throwing; the Phœnicians and Hebrews being dexterous at the use of the sling. The Greeks called these islands Gymnasia, because, in summer, the inhabitants went naked, or rather because they were only armed with a sling in war. There are two principal ones called Major and Minor; and hence the modern names Majorca and Minorca. The Major is distant from the Minor thirty miles to the west; in length 40 miles, and in circuit 150. They were subdued by Quintus Metellus, A. A. C. 120. The Baleares, together with the adjacent islands, were a part of the Provincia Citerior or Tarraconensis, and of the resort of the Coventus Carthaginiensis, or New Carthage. These islands are called Cheorades, by Apollonius, and Choeradades, by Strabo, i. e. rocky. See Majorca and Minorca.

BALEARICUS, a surname obtained by Metellus upon his conquest of the Baleares.

BALECHOU (John Joseph), a celebrated French engraver, born at Arles, in 1719. He died at Avignon, in 1765. This extraordinary artist wrought entirely with the graver, of which he was fully master. The clearness of his strokes, and the depth of color which he produced, are far beyond any production prior to his own. His two large plates from Vernet, the one representing a storm, the other a calm, must ever be considered as astonishing exertions. They are too well known, and too much admired, to need any further eulogium: and were never equalled, until they were perhaps surpassed by our countryman Woollet.

BALEN (Hendrick Van), history and portrait painter, was born at Antwerp, in 1560; was a disciple of Adam Van Oort, and resided at Rome a considerable time. He copied the antiques; and at his return to his own country, the visible improvement of his taste procured him the esteem of the ablest judges. He gave to his figures so much truth, roundness, and correctness of outline, that few of his contemporaries could enter into competition with him. Several fine portraits of his remain. He died in 1632.

Balen (John Van), painter of history, landscapes, and boys, was born at Antwerp, in 1611; and derived his knowledge of the art, and his fine taste of drawing and design, from his father Hendrick; but, as soon as he had made a competent progress, he travelled to Rome, and lived for several years in that and other cities of Italy. There he acquired a good gusto of design, though he was sometimes incorrect. His particular merit was in his figures of naked boys, cupids, and nymphs bathing or hunting, of which subjects he painted a considerable number; and he procured both praise and riches by his landscapes and histories. The carnations of his figures were clear and fresh; his coloring in general transparent; the airs of his heads were in the manner of Albano.

BALENGARIA, Balenger, in writers of the

middle age, a kind of vessel of war, but of what particular construction seems not well known. Blount says, that by the stat. 28 Hen. VI. cap. 5, balenger seems to have been a kind of barge.

BALES (Peter), a famous master in the art of penmanship, or fair writing; and one of the first inventors of short hand. He was born in 1547, and is styled, by Anthony Wood, 'a most dexterous person in his profession.' Wood adds, that 'he spent several years in sciences among the Oxonians, particularly in Gloucester-hall; but that study, which he used for a diversion only, proved at length an employment of profit.' He is mentioned in Hollinshed's Chronicle, A. D. 1525; and Mr. Evelyn has celebrated his delicate execution of a piece of writing, containing the Lord's Prayer, the Creed, Decalogue, with two short prayers in Latin, his own name, motto, day of the month, year of the Lord, and reign of the Queen (Elizabeth), to whom he presented it at Hampton Court, all 'written within the circle of a single penny, inchased in a ring and borders of gold; and covered with a crystal, so accurately wrought as to be very plainly legible, to the great admiration of her Majesty, the whole Privy Council, and several ambassadors then at Court?' He was also dexterous in imitating hand-writing, and, about 1586, was employed by Secretary Walsingham in certain political manœuvres. In 1590, we find him at the head of a school, near the Old Bailey, London; in which year he published his Writing Schoolmaster, in three parts: the first teaching swift writing, the second true writing, the third fair writing. In 1595, he had a great trial of skill in Blackfriars with one Daniel Johnson, for a golden pen of £20 value, and won it. He had also the arms of Calligraphy given him, which are Azure, a Pen, Or, as a prize, at a trial of skill in this art among the best penmen in London. In 1597, he republished his Writing Schoolmaster, which was in such high reputation, that no less than eighteen copies of commendatory verses, composed by learned men of that time, were printed before it. Wood says, that he was engaged in Essex's treasons in 1600; but he was only engaged, and very innocently so, in serving the treacherous purposes of one of that Earl's mercenary dependents.

BALESSAN, the eastern name for that species of the Amyris which produces the celebrated balsam of Mecca, the ancient balm of Gilead. This plant grows to the height of fourteen feet, flourishing in a hot climate, and in a stony barren soil. In general it is lower, and Mr. Bruce describes a specimen five feet and a half in height, and five inches across the stem where thickest. The wood is white, light, and of open texture, covered with a smooth bark, reddish or of bluish white, resembling that of a healthy standard cherry-tree, green within, and emitting a very fragrant odor. That of the branches, which are very flexible and resinous, is equally agreeable. The leaves, which are evergreen and scanty, bear some resemblance to those of rue; and the flowers, which are leguminous and of a purplish color, resemble those of the acacia. The fruit consists of small pointed ovoidal berries, containing a yellowish fluid similar to honey, of a bitterish taste, and exhaling a pleasing perfume, approaching the odor of balm.

It has been in modern times maintained that the plants producing the balsam of Mecca are restricted to a plantation of a little more than thirty acres, at Beder Hunein, a station for pilgrims in Arabia, between Mecca and Medina. Yet it cannot be positively affirmed if this be one species, that Abyssinia, the country ascribed to the other, is deprived of it; or that the balm of Gilead grows in Abyssinia exclusively. These are facts which require elucidation from future botanical research. The plantation belongs to a noble family of Arabs, of the tribe Beni K'oreish, from which Mahomet originated, unless the Wahabees, who interrupted the wonted pilgrimages, have dispossessed them of their inheritance. The balsam is a resinous matter, exuding, like ordinary resin from incisions in the bark, in July, August, and September. It is received in an earthen bottle, and the most productive trees do not yield more than sixty drops a day, we are told. At this time it emits a very strong and pungent odor, and is of a rough, acrid taste, a pale yellow turbid color, and it dissolves in oils readily. Afterwards it acquires a deeper color, as well as greater consistency and clearness, and is not unlike honey in its appearance. It sinks in clear water to the bottom, and, if dropped on hot iron, collects itself into a globule. It is said to be frequently adulterated with honey, wax, and oil. The best kind is called opobalsamum; there are two other kinds, the carpobalsamum, and xylobalsamum; they are obtained from an expression of the fruit of the amyris, the other from a decoction of the twigs.

Prosper Alpinus ascribes many properties to the balsam of Mecca, esteemed the most precious of all that bear the appellation of balsam, and which, in ordinary description, we must consider synonymous with the balm of Gilead; and the modern Arabs, Turks, and Egyptians, entertain great confidence in its efficacy. It is a powerful vulnerary: Mahomet affirmed, that a grove of the trees sprung up from the blood of his own tribe killed in battle, the juice of which cured the wounds of the faithful, however deadly, nay, that it recovered some of them from death itself. It is also taken for complaints in the breast, in fevers, and rheumatism. Hasselquist says, it is useful as a stomachic in doses of three grains. Its repute as an antiseptic is very great; and it is esteemed so effectual an antidote against the plague, that when this distemper makes its appearance, the Egyptians take a certain quantity daily. Its principal use, however, is as a cosmetic by the eastern females of rank: after being kept in a very warm bath, the face and breast are anointed with it, and the same process is continued every third day for a month. Oil of almonds and other cosmetics are then rubbed over the parts, whereby the skin and complexion are beautifully renovated. Lady Mary Wortley Montague relates that she was induced to try the experiment, by which her face became swelled and red for three days, during which she suffered much pain, but her complexion was greatly improved. She adds that the ladies of Constantinople, by whom it is used, have the finest bloom. As yielding the virtues of the balm of Gilead. this plant has been celebrated from very remote antiquity. When Joseph was confined by his brethren in a pit, it is said, 'they sat down to eat bread; and they lifted up their eyes and looked, and behold a company of Ishmaelites came from Gilead, with their camels bearing spicery, and balm, and myrrh, going to carry it down to Egypt.' Jeremiah particularly alludes to its virtues; and Josephus states, the queen of Sheba, or Saba, 'who was inquisitive into philosophy, and on that and other accounts was also to be admired,' brought the balm of Gilead as a present to Solomon, on her visit to Jerusalem.

'They say also,' he adds, 'that we possess the root of this balsam, which our country still bears, from that woman's gift.' It appears from the writings of the ancients, nearly contemporary with Josephus, that Judea was generally believed to be possessed of it exclusively. Pliny says, 'To all other odors whatsoever is to be preferred that balsam, which is produced in no other part of the world than the land of Judea, and there in two gardens only, both belonging to the king, one not exceeding twenty acres in size, and the second still smaller.' Strabo partly confirms the above accounts, ascribing it to that country, over or near to which the queen of Sheba reigned. 'Near to this,' he says, 'is the most favored land of the Sabeans, a very great people. Frankincense, myrrh, and cinnamon, grow among them, and in the coast that is about Saba, the balsam also.' Whence Bruce observes, that 'among the myrrh-trees behind Asab, all along the coast to the Straits of Babelmandel, is its native country. It grows to a tree about fourteen feet high spontaneously, and without culture, like the myrrh, the coffee, and frankincense-tree; they are all equally the wood of the country, and occasionally cut down for fuel.' Diodorus Siculus affirms that this balsam grew in a valley of Arabia Felix. Ali Bey says, that there is no balsam made now at Mecca: that, on the contrary, it is very scarce, and is obtained principally in the territory of Medina; as also that it was called belsan, for whose history see our article Badia.

Galen travelled into Syria and Palestine, purposely to obtain a knowledge of this substance: in 1516 we find the emperor Selim levying a tax of three pounds weight of it annually on Arabia and Egypt; which is said to be levied to this day.

Part of the governor of Cairo's appointments include a right to receive a pound of balsam; the like quantity is due to an officer who conducts the caravan of pilgrims to Mecca; and half a pound to the pacha of Damascus.

BALESTRA (Antonio), an excellent historical painter, born at Verona in 1666. At the age of twenty-one he went to Venice, where he continued for three years, under the direction of Ant. Bellucci. He next visited Bologna and Rome, and at the latter became the disciple of Maratti. Under him he exerted himself in designing after Raphael, Corregio, Annibal Caracci, &c. by which he so effectually confirmed his taste, that he obtained the prize of merit in the academy of St. Luke, in 1694, when he was only twenty-eight. From that time his reputation was established, and he was engaged to work for most of the churches and the nobility, and his paintings were universally admired. His style is like that of Maratti; and his works have a certain mixture of the manners of Raphael, Corregio, and Caracci. He died in 1740. In the church of Santa Maria Mater Domini, at Venice, there is one of his most capital performances, representing the nativity of our Saviour. In a chapel belonging to the church of S. Geminiano, in the same city, there is another capital picture of his, representing our Saviour dead, in the arms of the virgin.

Balestra, in ichthyology, a name by which Sylvian and others have called the fish more usually known by the name of Capriscus.

BALETCHENCK, a town of Turkey in Asia, on the Kurasir, twenty-one miles from Hazahan, and twenty-seven miles from Katibounou. It consists of 260 houses, and carries on a considerable traffic in horses, cattle, and goats' hair, made into bags.

BALEY (Walter), the son of Henry Baley of Warnwell in Dorsetshire, was born at Portsham, and educated at Winchester. From thence he was sent to Oxford; and, after two years probation, was admitted perpetual fellow of New College, in 1550. Having taken his degree of M. A. he practised physic, and in 1558 was proctor of the university. About this time he obtained the prebend of Wells, which he resigned in 1559. In 1561 he was appointed queen's professor of physic, in 1563 proceeded M. D and afterwards became one of her majesty's physicians in ordinary. He was thought skilful in his profession, and had considerable practice. He died in 1592, aged sixty-three; and was buried in the inner chapel of New College. His works are, 1. A Discourse of three kinds of Pepper in common use, 1588, 8vo. 2. Brief Treatise of the Preservation of the Eye-sight; first printed at Oxford in 1616 and 1645, 8vo. 3. Directions for Health, natural and artificial; with medicines for all diseases of the eyes, 1626, 4to. 4. Explicatio Galeni de potu Convalescentium et Senum, &c. MS. formerly in Lord Aylesbury's library.

BALFROSH, a town of Persia, in the province of Mazendaran, consisting of one principal street, occupied almost wholly by a bazaar, and divided into seventeen wards. Here are eight caravansaries, three of which are devoted to the use of the Russians and Armenians. It is the second town of the province, distant twenty miles west of Fehrabad.

BALGA, a bailiwic, castle, and town of Brandenberg, in East Prussia, opposite Pillau, and twenty-four miles south-west of Konigsberg. The celebrated fortress of Storeda is in the vicinity.

BALGAVIES, a lake of Scotland, in the parish of Aberlemno, in Angusshire, through which the Lunan runs. It furnishes much marl for manuring the adjacent grounds.

BALGILLO, a hill of Scotland, in the parish of Monyfeith in Angusshire, about half a mile north of Broughty Castle; on which there are still to be seen remains of those fortifications that were erected by the English, under Henry VIII. when they ravaged Dundee and most of the county during the regency of the earl of Arran, in 1548.

BALGONIE, a district in Fifeshire, the property of the Earl of Leven, and from which his eldest son takes his title. It produces excellent coals, and is said to have been wrought for that mineral upwards of 300, some say 500, years ago.

BALGONIE CASTLE, one of the earl of Leven's seats, in the parish of Markinch, in Fifeshire, a fabric of great antiquity, supposed to have been built in the twelfth century.

BALGUY (John), an eminent divine of the church of England, was born in 1686, at Sheffield, and studied at Cambridge, where he took the degrees of A. B. and M. A. In 1708 he was appointed tutor to Joseph Banks, esq. grandfather to the celebrated Sir Joseph. In 1710 he was ordained a deacon, and in 1711 a priest, when Sir H. Liddel bestowed on him the donative of Lamesly and Tanfield. In this small cure he composed a new sermon every week, 250 of which he afterwards burnt, that his son, Dr. Thomas Balguy, archdeacon of Winchester, might exercise his own genius, instead of trusting to his father's labors. In 1727 he was collated by bishop Hoadly to a prebend in Salisbury, with the right of presenting to four livings; of which he gave one to his son, and another to his brother-in-law, Mr. Robinson. He published 1. Silvius's Examination of certain Doctrines taught by the Reverend Mr. Stebbing, in 1718; 2. Silvius's Letter to the Rev. Dr. Sherlock, in 1719; both anonymously, in vindication of Bp. Hoadly. Mr. Stebbing having replied to these works, Mr. Balguy published, 3. Silvius's Defence of a dialogue between a Papist and a Protestant, in answer to the Rev. Mr. Stebbing; with remarks on that author's manner of writing; 4. A Letter to a Deist concerning the Beauty and Excellence of Moral Virtue, and the support which it receives from the Christian Revelation, in 1726. In this treatise he attacked Lord Shaftesbury's principles, with equal politeness and strength of reasoning. 5. The Foundation of Moral Goodness, or an Enquiry into the Original of our Ideas of Virtue; in two parts, in 1728. 6. Divine Rectitude, or a brief Enquiry concerning the Moral Perfections of the Deity, &c. 7. A second Letter to a Deist. 8. The Law of Truth. 9. Essay on Redemption: and, 10. A Volume of Sermons. He died in 1748, aged sixty-three.

BALI, or **BALLY**, sometimes called also Little Java, one of the Sunda or Sumatran islands, separated from the eastern extremity of Java by the straits of Bali, about five or six leagues wide and of very intricate navigation. Its length according to Sir T. S. Raffles, to whom we are indebted for the greater part of our information respecting these islands, is about eighty miles, and in its breadth nearly equal, the whole surface containing about 6400 square miles. He thinks the population may be estimated at a little more than sixty persons to each square mile, which would give about 400,000 for the number of its inhabitants. The country is mountainous, rising into the interior; the ravines and beds of rivers are deep, and the rivers rapid.

Bali is well cultivated and thickly planted with cocoa-nut and other fruit-trees: the uncultivated parts are crowned with deep forests.

Its productions consist chiefly of rice, maize, yams, and sweet potatoes; rice yields from thirty to forty fold, and the maize often more than a hundred. The Balinese also grow cotton on the dry land, of a superior kind; some opium, nutmegs, dyeing drugs and tobacco, are also objects of culture. On the whole, the Balinese may be considered, we are told, as the most civilised islanders in this archipelago, not excepting even the Javanese. The women manufacture a considerable quantity of cotton cloth for exportation; and are not so much in the field as those of Java: the men manufacture their own fire-arms. On the eastern coast at a place called Pejan a gold mine has been opened. They import chintz and other piece goods, iron, and china ware. Iron, in particular, is in great request. The religion is that of Budh, but not divided into castes; and the priesthood, at least in general, is hereditary. The priests live secluded in separate societies, among the mountains, having lands assigned for the support of themselves and their temples. Justice is administered by distinct civil magistrates, who very intelligently expound the law from written authorities, which is a decided proof that civilisation has had a powerful influence even upon the body of the people.

Bali is governed by seven native and independent princes, each absolute in his own dominion; though their despotism appears to be of a much milder character than among the native governments of Java. A right of private property in the soil is said to be established, and the claims of the government to be confined to a regular tax in kind on the rice. The language presents the singular distinction of one class of words to be used by the privileged orders, and another for the people in general. A sort of feudal service in war is maintained; slavery, we regret to add, though unknown among them, is encouraged by the sale of their prisoners of war to other nations. They are also said to use poisoned arrows in war.

Historically it seems only to be known that this island was visited by Sir Francis Drake in 1597, and that the conversion of the natives to Budhism took place about 1750 years since. The east peak of the island is in lat. 8° 24′ long. 115° 24′ E.

Their language is written in the same character as that of Java, and the Javan is said to be spoken at the courts of their princes, but it is considered as a foreign tongue. The Kawi, the learned language of all these islands, is well understood at Bali. The Balinese are represented as mild and inoffensive in their manners; they readily associate with strangers, and are altogether divested of those bigoted prejudices of caste, nation and religion, with which the people of continental Asia are generally imbued. On the other hand they are said to be the only people of the archipelago who possess either courage or tractability for receiving the regular discipline of European troops. Their food consists principally of the flesh of hogs and buffaloes, with which ships touching here are readily and reasonably supplied. Nor is the use of spirituous liquors or opium unknown, both of which have been introduced by Europeans. Their houses, like those of Java, are built upon the ground, and not raised upon posts as amongst the Malays. They are generally clothed in cotton of their own manufacture, and of a good fabric. Until they are married, indeed, the females go nearly naked, then the bridegroom wraps a selendang or cloth round the bosom of his chosen fair. There is said to be great general prudence and fidelity in their marriages.

BALIO. See Bailo.

BALIOL, Balliol, or Bailliol (John), king of Scotland. On the death of queen Margaret, in her passage from Norway, being at the head of the English interest in Scotland, he claimed the vacant throne, by virtue of his descent from David earl of Huntingdon, brother to William the Lion, king of Scotland. Robert Bruce opposed Baliol, but having submitted to the arbitration of Edward I. it was decided in favor of Baliol, who did homage to him for the kingdom on the 12th of November, 1292. Baliol, however, did not long enjoy the crown, for having remonstrated against the power which Edward assumed over Scotland, he summoned him to his tribunal as a vassal. Irritated at this, Baliol concluded a treaty with France, on which a war with England immediately commenced; and after the battle of Dunbar he surrendered his crown into the hands of the English monarch, who sent him and his son to London to be imprisoned in the Tower. The pope interceded for them, and they were liberated, and committed to his legate in 1297. Baliol retired to his estate in France, where he died in 1314.

Baliol (Edward), the son of John Baliol, king of Scotland. Notwithstanding the manner in which his father was degraded, and obliged to give up his crown, he laid claim to the kingdom of Scotland, and, assisted by France, invaded and recovered it; but it was soon again wrested from him; and dying afterwards without issue the family became extinct.

Baliol, or Balliol (Sir John de), founder of Baliol college, in Oxford, was son of Hugh Baliol, of Bernard's castle in the diocese of Durham, and eminent for his power and riches. He was appointed governor of Carlisle in 1248; and when Margaret, daughter of Henry III., was married to Alexander III., king of Scotland, the guardianship of the royal pair, and also of the kingdom, was committed to him and another lord; but in about three years they were charged with abusing their trust, and the English monarch marched towards Scotland, on purpose to punish them. Baliol, however, pacified him by advancing a sum of money. During the wars between Henry III. and the barons he adhered to the king, on which account the barons seized his lands. In 1263 he began the foundation and endowment of Baliol college, which was afterwards completed by his widow. He died in 1269.

BALISTES, in icthyology, a genus of fishes belonging to the order of amphibia nantes. The characters are, the head is flat; eight teeth in each side, the two anterior ones are longest; in the place of gills an aperture immediately above the pectoral fins; the body flat; the scales joined together by the skin, and the belly keeled. There are eight species of this genus:—viz. B. aculeatus, with a triradiated back fin, and the spines of the tail lean upon each other. It is a native of India. 2. B. hispidus with the head-fin uniradiated, and a round black spot in the tail-fin; the body rough, and bristly towards the tail; the spine or horn situated between the eyes; the snout subulated, and instead of a belly-fin a jagged sharp spine. This is a native of Carolina. 3. B. monoceros, whose head-fin consists of but one ray, and the tail-rays carinated. It is called the unicorn-fish by Catesby. This fish has been accounted poisonous. They mostly frequent those seas, amongst the Bahama islands, where the corals are in great plenty. 4. B. papillosus, with a biradiated back-fin, and a papillous body. 5. B. ringens, with a triradiated back-fin; three folds in each side of the head, and the tail-fin forked. It is found at Ascension island. 6. B. tomentosus, whose head-fin is biradiated, and the body of it, towards the hind part, hairy. It is a native of America. 7. B. verrucosus, has a triradiated back-fin, and the tail full of little warts. In the place of a belly-fin this species has a large, thick, warty ray, and twenty-five small reversed sharp spines at the side of the tail, disposed in four rows. It is a native of India. 8. B. vetula, or old wife, with a triradiated back-fin; the belly-fin longitudinal and somewhat carinated; and the tail-fin forked. It is found at Ascension island.

The fishes of this genus are remarkable for their splendid colors. The species mentioned by Linnæus and Gmelin are the following:—monoceros, scriptus β, hispidus, tomentosus, papillosus, verrucosus, biaculeatus, aculeatus, vetula, maculatus, ringens, sinensis, assassi, capriscus, forcipatus, punctatus, Kleinii, curassavicus, and Americanus. Lacepede has described twenty-four species of balistes, in his work on fishes, and which he divides into four sections:—Le baliste mamelonné, le baliste pralin, le baliste verdatre, le baliste Mungo-Parck (Park); le baliste métallique, &c. are new or interesting species described by Lacepede.

BALISTER, *n. s.* Lat. *balista*; Fr. *balesto*, a cross bow.

> A spindle full of raw thread to make a false string for the king's *balister* or cross bow.
>
> *Blount's Tenures*, p. 92.

BALIZE, a river in the peninsula of Yucatan, South America, which falls into the bay of Honduras, in lat. 14° 59′ N. On its banks, and to the extent of 200 miles up the stream, the English cut mahogany, and by the treaty of 1783 a right was guaranteed to British subjects of cutting and carrying away logwood, in the district between this river and the Rio Hondo. Beyond the scene of their operation the Balize is very imperfectly known.

Balize, a sea-port town of Yucatan, South America, is an establishment chiefly composed of English settlers, at the mouth of the above river The houses are mostly built of the wood of the neighbourhood, amongst which the graceful mahogany frequently furnishes pillars of eight or ten feet high, on which they stand, surrounded by piazzas. The cocoa tree and tamarind, largely interspersed among the buildings, which are also frequently thatched with leaves of the palmetto, give the whole place a very picturesque appearance. But the better sort of houses have of late been shingled. The neighbourhood is low and swampy.

BALK, *n. s. v. a.* & *v. n.* Dutch and Germ. *balk*; Sax. and Wech balc, derived by Skinner from Ital. *valicare*, to pass over. A great beam such as is used in building; a rafter over an outhouse or barn; a ridge of land left unploughed, between the furrows, or at the end of the field; land over which the plough slips without turning it up; figuratively any thing overpassed, untouched. A disappointment; to frustrate, to elude, to omit, or refuse any thing; to heap together; to turn aside, to deal in cross purposes; to speak differently from the intention. The two last meanings are arbitrary, and rest on the authority of Spenser only.

> His owne hond than made he ladders three
> To climben by the ringes and the stalkes
> Unto the tubbes hanging in the *balkes*. *Chaucer.*

BALKAN (anciently called Hæmus), a lofty and rugged chain of mountains, extending from Cape Emineh Burum, on the Black Sea, in European Turkey, to Cape San Stefano, in the Adriatic Sea, from 23° to 27° E. lon. Near Sulu Derbent (Porta Trajani), this mountain, called, by the Turks, Emineh Slag, separates from Rhodope, and divides the valley of the Danube, which constitutes Bulgaria (inhabited mostly by wandering tribes), from Romania, or Rumelia. A branch extends from north to south (Mount Athos); another runs through ancient Greece, and comprehends the mountains Olympus, Œta, Pindus, Parnassus, Helicon. The highest peak, Orbelus, rises 9660 feet above the surface of the sea. After the overthrow of the empire in Constantinople, only the Greeks of the plains and the sea-coast submitted to the Mussulmans. The warriors, and those who had no landed property, fled into the mountains, into the armatolics, and have, in general, maintained a continual contest with the pachas of the plain: some have paid a small tribute to the Turkish pacha, and some have become Mohammedans. The districts where the Catholic is the prevailing church, contain the wildest inhabitants, and have never been subjected to the emperors of Constantinople for any length of time. In 1828 a Russian army crossed the Balkan, advanced nearly to the gates of Constantinople, and dictated a peace to the sultan.

BALK'ERS. In fishery. Men who stand on a cliff, or high place on the shore, and give a sign to the men in the fishing boats, which way the passage or shoal of herrings is.—*Cowell.*

> The pilchards are pursued by a bigger fish, called a plusher, who leapeth above water, and bewrayeth them to the *balker*. *Carew's Sur. of Corn.*

BALKH, a province of Turkistán, bounded on the north by the Amú, on the east by Badakshán, on the south by the Hindú-cush, and on the west by the deserts of Khwárezm, the ancient Bactria. Its present extent is about 250 miles from east to west, and about 110 from north to south. The southern and eastern districts are comparatively cool for the climate, and the valleys towards the Amù are well watered and fertile. The rivers from the Hindú-cush, we learn from Mr. Elphinstone, flow in a direction almost due north, into the Amù: the Koksha, or Badakhshán, is the easternmost; next comes the Ak-serâï; and the last and most westerly, the Rehás, loses itself in the sands before it reaches Balkh. Balkh is divided into the districts of Maïmench, Andekhúd, Shilbúrkán, or Shibberghán, Balkh Proper, Kulum, Hazeret Imám, Kundus Khost, Inderáb, and Tálikan. The three first border on the deserts, and are occupied by wandering hordes of Uzbegs and Turcomans.

Balkh, a city of Turkistán, the capital of the above province, stands in lat. 36° 45′ N., long. 65° 20′ E.; it is now in ruins; but is surrounded by 360 fertile villages. The districts Kulum and Hazeret Imàm are barren, but those on the north side of the Hindú-cush, are productive and well peopled. The population of the whole province amounts probably to a million. Balkh was originally built by Kayúmaras, and was the favorite residence of the Persian kings of the Caianian dynasty. It was once esteemed the chief Mussulman city in the north, and called Kubbatu'l islám, (the holy shrine of Islamism). Jengìz Khán took it in 1221, and the last of his family was driven out of it by Tamerlane. In the beginning of the sixteenth century the house of Taïmúr was expelled by the Uzbegs, who have ever since maintained a precarious dominion over these provinces. Kilij Alî Bey was the reigning prince when Mr. Elphinstone visited Afghánistán, nominally acknowledging the authority of the king of Cábul; but in all the internal government entirely independent.

BALKY, a large decayed old town of Hindostan, in the province of Beeder, surrounded by a wall. It is distant fifteen miles W. N. W. of Beeder, and forty-five north-east of Kalbergah. Long. 77° 29′ E., lat. 17° 49′ N.

BALL, a small place in the county of Mayo, 107 miles from Dublin. Here is a celebrated holy well and a round tower; also at Moat in the neighbourhood the ruins of an ancient abbey. This place is sometimes called Ballagh. The living is a prebend in the archdiocese of Tuam.

Ball (John), a puritan divine, born in Oxfordshire in 1585. He had a curacy of £20 per annum in Staffordshire, and kept a school. He wrote strongly against such as separated from the church, as disapproving of the ceremonies and government, though he was far from being satisfied with these in some respects himself. He died in 1640.

BALL'. Germ. and Dutch *bollen-bol*, to roll, turn, round; any thing round, or roundly, as a cricket ball, a billiard ball, the eye ball, the globe, any thing globular.

'*Bal*, diminutively *Belin*, the sun, or Apollo, of the Celtæ, was called by the ancient Gauls *Abellio*. Whatever was round, and in particular the head, was called by the ancients either *Bal*, or *Bel*, and likewise *Bôl* and *Bül*. Among the modern Persians, the head is called *Pole*; and the

ings do still call the head *Boile*. Πολος is the head or poll; and πολειν is to turn. Βολος likewise signifies a round ball, whence *bowl*, and *bell*, and *ball*, which the Welsh term *bêl*. By the Scotch also the head is named *bhél*; whence the English *bill* is derived, signifying the beak of a bird. Figuratively, the Phrygians and Thurians by βαλλην understood a king. Hence also, in the Syriac dialects, βααλ, βηλ, and likewise Βωλ, signifies lord, and by this name also the sun; and in some dialects, Ηλ and Ιλ, whence Ιλος and Ηλιος, Γηλιος and Βηλιος, and also, in the Celtic diminutive way of expression, Ελενος, Γελενος, and Βελενος, signified the sun; and Ελενη, Γελενη, and Βελενη, the moon. Among the Teutonics, *hol* and *heil* have the same meaning; whence the adjective *holig*, or *heilig*, is derived, and signifies divine or holy; and the aspiration being changed into *s*, the Romans form their *Sol*.'
Baxter.

For where as God hath shewed unto us certain tokēs of his Godhed, in the heavenly *balles* and circles above, and on the yearthe beneth, in the sea, and in all lyuing creatures on the yearthe, yet hath he wrought in none of thym more wonderfully than in manne. *Udall. Acts*, ch. xvii.

The palme play, where despoiled for the game,
With dased eyes oft we by gleams of love
Have missed the *ball*, and got sight of our dame,
To bait her eyes which kept the leads above.
Earl of Surrey.

Be subject to no sight but mine; invisible
To every eye-*ball* else. *Shakspeare.*

Balls to the stars, and thralls to fortune reign,
Turn'd from themselves, infected with their cage,
Where death is fear'd, and life is held with pain.
Sidney.

Those I have seen play at *ball*, grow extremely earnest who should have the *ball*. *Id.*

What, though in solemn silence, all
Move round the dark terrestrial *ball*!
What tho' nor real voice nor sound
Amid their radiant orbs be found!
In reason's ear they all rejoice,
And utter forth a glorious voice;
For ever singing, as they shine,
'The hand that made us is divine.'
Andrew Marvell.

⁂ This, with the other sublime and beautiful hymns in the Spectator, were meanly withheld from their genuine author, and falsely ascribed to Addison and Tickell.

Nor arms they wear, nor swords and bucklers wield,
But whirl from leathern strings huge *balls* of lead.
Dryden.

Thus nothing to her genius was deny'd;
But, like a *ball* of fire, the further thrown,
Still with a greater blaze she shone;
And her bright soul broke out on ev'ry side. *Id.*

Like a *ball* of snow tumbling down a hill, he gathered strength as he passed. *Howell.*

Ye gods, what justice rules the *ball*?
Freedom and arts together fall. *Pope.*

'Tis but a *ball* bandied to and fro, and every man carries a racket about him to strike it from himself among the rest of the company. *Swift.*

BALL', *n. s.* Fr. *bal*, from *balare*, low Lat. from βαλλιζειν. To throw or cast about the legs and feet, from βαλλω, to throw. An entertainment of dancing; a fashionable amusement, either public or private; in the former case it is conducted and controlled by a master of the ceremonies; and in the latter it is given by individuals, and is select, because none are admitted but persons specially invited. At public balls, or dancing assemblies, the expenses are defrayed by the company; at private entertainments of this description, the guests are gratuitous participants.

He would make no extraordinary figure at a *ball*; but I can assure the ladies, for their consolation, that he has written better verses on the sex than any man.
Swift.

Have you not been in pain even at a *ball*, because another has been taken out to dance before you.
Tatler, No. 253.

There's nothing in the world like etiquette;
In kingly chambers, or imperial halls,
As also at the race and county *balls*. *Byron.*

BALL, among Cornish miners, a tin mine.

BALL, in antiquity, a species of game frequent among the ancients. The Romans had four kinds of pilæ, or balls; the first called trigon or trigonalis, because the three gamesters were placed in a triangle: these caught and tossed the ball, taking great care not to let it fall to the ground. The second and third, called follis, made of leather, blown up like our foot-balls: the largest sort of these were struck with the arm, the smaller with the fist: the former seem to have been distinguished by the appellation, paganica, as being much used in country villages: the fourth was the harpast, a kind of small ball, so called because the gamesters endeavoured to snatch it from each other. Galen has an entire treatise on the exercise of the lesser ball.

BALL, HERO'S, pila Heronis, a kind of artificial fountain, wherein the water is made to spout out of a hollow ball or globe; so named from the inventor, Hero of Alexandria, who has left the description of it in his Spiritalia.

The BALL OF A DOG'S FOOT is the prominent part of the middle of the foot, called by Latin writers of the middle age, pelota.

BALL OF A PENDULUM, the weight at the bottom. In shorter pendulums, it is called the bob.

BALL PUFF, in botany, the English name of the lycoperdon. See LYCOPERDON.

BALL VEIN, in mineralogy, a name sometimes given by miners to a sort of iron ore, common in Suffolk, and wrought to a considerable advantage. It yields not any great quantity of metal, but what it has runs freely in the fire, and is usually found in loose masses, covered with one or more crusts. It contains some sparkling particles; and is usually of a circular form in the perfect masses, thickest in the middle, and gradually thinner as it approaches the sides.

BALL, French, balle, in the military art, comprehends all sorts of bullets for fire-arms, from the cannon to the pistol; also a composition of divers ingredients, generally of the combustible kinds, serving to burn, give light, smoke, stench, or the like; as fire-balls, light-balls, smoke-balls, stink-balls, land-balls, &c. Cannon-balls are made of iron, musket-balls, pistol-balls, &c. are of lead. The experiment has been tried of iron balls for pistols and fusees, but they are justly rejected, not only on account of their lightness, which prevents them from flying straight, but because they are apt to furrow the barrel of the pistol, &c.

Cannon-balls are distinguished by their respective calibres: thus

For a	pound ball the diameter is
42	6·68
32	6·10
24	5·54
18	5·04
12	4·40
9	4·00
6	3·49
3	2·77
2	2·42
1	1·92

A new description of inflammable balls, applicable for besieging a town, and peculiar for its small weight, by which means it may be thrown to a great distance, and takes fire on a very curious plan, has been invented by Captain Thomas Dundas, of the royal navy. It spreads a flame in three distinct openings, which is so strong that the fire extends a full yard in length from the ball itself, and is so powerful that any thing under, over, or near, cannot escape its effects. See the article SHOT.

BALLS, ANCHOR, are made in the same way as the light-balls, hereafter described, and filled with the same composition, only with this addition, that these are made with an iron bar two-thirds of the ball's diameter in length, and three or four inches square. One-half is fixed within the ball, and the other half remains without; the exterior end is made with a grapple hook. Anchor-balls are very useful to set fire to wooden bridges, or any thing made of wood, or even the rigging of ships, &c. for the pile end being the heaviest, flies foremost, and wherever it touches, fastens, and sets all on fire about it.

BALLS, CHAIN, are two balls linked together by a chain of eight or ten inches long, and some have been made with a chain of three or four feet long; they are used to destroy the palisadoes, wooden bridges, and chevaux-de-frizes of a fortification. They are also very destructive to the rigging of a ship.

BALLS, FIRE AND LIGHT; the Greeks had various kinds of fire-balls, or Πυροβολοι λιθοι; one kind called, more particularly, *σκυταλια*, or *σκυταλιδες*, made of wood, sometimes a foot, or even a cubit long; their head armed with spikes of iron, beneath which were hemp, pitch, and other combustibles, which being set on fire, they were cast among the enemy. Also composed of mealed powder two, saltpetre one and a half, sulphur one, resin one, turpentine two and a half parts. Sometimes they are made of an iron shell, sometimes a stone, filled and covered with various coats of the above composition, till it conglomerates to a proper size, the last coat being of grained powder. But the best method of making them is to take thick brown paper, make a shell the size of the mortar, and fill it with a composition of an equal quantity of sulphur, pitch, resin, and mealed powder; which being well mixed, and put in warm, will give a clear fire, and burn a considerable time. When they are intended to fire magazines, buildings,
&c. the composition must be mealed powd
saltpetre two, sulphur four, and resin
rather mealed powder forty-eight, saltpetr
two, sulphur sixteen, resin four, steel
filings two, fir tree saw-dust boiled in saltp
two, birch-wood charcoal one, well ramm
a shell for that purpose, having variou
filled with small barrels, loaded with
balls; and lastly, the whole immerged in
pitch, resin, and turpentine oil.

BALLS, POISONED; the Indian and
nations have always been ingenious at po
several sorts of warlike stores and instr
Their composition is generally mealed
four, pitch six, resin three, sulphur fiv
fœtida eight, extract of animal poison
other poisonous substances twelve, ma
balls as above directed. At the commen
of the French revolution, poisoned ball
exhibited to the people, pretended to ha
fired by the Austrians, particularly at the
Lisle. Major James says he has seen
this sort. They contained glass, small p
iron, &c. and were said to be concocted
by means of a greasy composition, wh
impregnated with poisonous matter. I
they were deposited in the archives of Pa

BALLS, RED-HOT, are heated red-hot
large coal fire in a square hole made
ground, six feet every way, and four or
deep. Some make the fire under an iro
on which the shell or ball is laid; but
method is to put the ball into the midd
clear burning fire, and when red-hot, all
particles must be swept off. Whatever
you use to throw the red-hot ball out of,
be elevated according to the distance you
it shall range, and the charge of powder
put into a flannel cartridge, and a go
upon that; then a piece of wood of th
diameter of the piece, and about three
and a half thick, to prevent the ball from
fire to the powder; then place the ball
edge of the mortar, &c. with an instrum
that purpose, and let it roll of itself ag
wood, and instantly fire it off. Should
a ditch or parallel before such a batter
soldiers, the wood must not be used, as
of powder will break it to pieces, and
elasticity prevent it from flying far; it w
that case either kill or wound your own
On this account the wad must be dou
second being damp. If the gun lies
pression, there must be a wad over
which may be rammed home.

BALLS, SMOKE, are prepared simi
other fire-balls, and they contain five to
pitch, resin, and saw-dust. This com
is put into shells made for that purpose,
four holes to let out the smoke. Smo
are thrown out of mortars, and continue
from twenty-five to thirty minutes.

BALLS, STANG, are generally termed
and by some called balls of two-head
are sometimes made of two half-balls
together by a bar of iron from eight to
inches long: they are likewise made of
tire balls; they answer the same purpos
before-mentioned.

Balls, Stink, are prepared by a composition of mealed powder, resin, saltpetre, pitch, sulphur, rasped horses and asses hoofs, burnt in the fire, assa-fœtida, seraphim gum or ferula, and bugs or stinking herbs, made up into balls, as mentioned in light-balls, agreeable to the size of the mortar out of which they are to be thrown.

Balls, in electricity, are two pieces of cork, or pith of elder, nicely turned in a lathe to the size of a small pea, and suspended by fine linen threads; intended as electrometers, and of excellent use to discover small degrees of electricity, to observe the changes of it from positive to negative, and vice versa; and to estimate the force of a shock before the discharge, so that the operator should always be able to tell very nearly before the discharge, by knowing how high he has charged his jars, what the explosion will be.

Balls, in heraldry. See Ballets.

Balls, Crystalline. There are two sorts of fossil bodies mentioned in authors by this name, and distinguished into the echinated, and concave. The first are roundish nodules of stony matter, covered over with points of crystal; and the other flints, and other stones, having cavities in their middles, which are lined, or crusted over with these crystals.

Balls, Horse, among farriers. Horses have a very nice taste; it is therefore proper to give the most disagreeable drugs, in the form of balls, and to make drenches of the more palatable. Balls should be of an oval shape, not exceeding the size of a pullet's egg; and should be dipped in sweet oil to make them slip down the easier. Some horses have a strait gullet, which makes them very averse to a ball being thrust down their throats; such horses had better have drenches given them, or their medicines may be mixed with bran, or in their mashes. See Farriery, *Index*.

Balls, Mercurial, in pharmacy, are an amalgam of mercury and tin, sufficiently solid to be moulded, and to preserve a given form. The method of making them is by adding mercury to melted tin, and pouring the fluid mass into a round hollow mould. These balls are sometimes employed to purify water, in which they are boiled.

Balls of Fire, in meteorology, a kind of luminous bodies, commonly appearing at a great height above the earth, with a splendor surpassing that of the moon; and even occasionally equalling her apparent size. They generally proceed with great velocity in this hemisphere, from north to south, frequently breaking into several smaller ones, sometimes vanishing with a report, and sometimes not. These luminous appearances no doubt constitute one branch of the ancient prodigies, or blazing stars. They sometimes resemble comets, in being attended with a train, but frequently they appear with a round and well defined disk. The first of which we have any accurate account, was observed by Dr. Halley and others at different places, in 1719. From the slight observations they could take of its course among the stars, its perpendicular height was computed at about seventy miles from the surface of the earth. The height of others has also been computed, and found to be various; though in general it is supposed to be beyond the limits assigned to our atmosphere, or where it loses its refractive power. The most remarkable on record appeared on the 18th of August 1783, about nine o'clock in the evening. It was seen to the northward of Shetland, and took a southerly direction for an immense space, being observed as far as the southern provinces of France and Rome. During its course it appears frequently to have changed its shape, sometimes appearing in the form of one ball, sometimes two or more; sometimes with a train, sometimes without one. It passed over Edinburgh nearly in the zenith, and had then the appearance of a well defined round body, extremely luminous, and of a greenish color; the light which it diffused on the ground giving likewise a greenish cast to objects. After passing the zenith, it was attended by a train of considerable length, which continually augmenting, at last obliterated the head entirely, so that it looked like a wedge, flying with the obtuse end foremost. The motion was not apparently swift, by reason of its great height; though in reality it must have moved with great rapidity, on account of the vast space it travelled over in a short time. In other places its appearance was very different. At Greenwich, we are told, that two bright balls parallel to each other led the way, the diameter of which appeared to be about two feet; and were followed by an expulsion of eight others, not elliptical, seeming gradually to mutilate, for the last was small. Between each two balls a luminous serrated body extended, and at the last a blaze issued which terminated in a point. Minute particles dilated from the whole. The balls were tinted first by a pure bright light, then followed by a delicate yellow, mixed with azure, red, green, &c. which, with a coalition of bolder tints, and a reflection from the other balls, gave the most beautiful rotundity and variation of colors that the human eye could be charmed with. The sudden illumination of the atmosphere, and the form and singular transition of this bright luminary, tended much to make it awful: nevertheless the amazing vivid appearance of the different balls, and other rich connective parts not very easy to delineate, gave an effect equal to the rainbow in the zenith of its glory. Dr. Blagden, in a paper on this subject in the seventy-fourth volume of the Philosophical Transactions, has not only given a particular account of this and other meteors of the kind, but added several conjectures relating to the probable causes of them. The opinion which he finally adopts, as the most probable, is, that these fire-balls are great bodies of electric matter moving from one part of the heavens, where to our conception it is superabundant, to another where it is deficient.

Other fireballs have appeared much smaller and nearer the surface of the earth, and sometimes rolling or falling upon it, and exploding with violence; as is the case with those which appear in the time of thunder, and frequently produce mischievous effects. One of these is mentioned by some authors as falling in a serene evening in the island of Jamaica; exploding as soon as it touched the surface of the ground, and making a considerable hole in it. Another is mentioned by Dr. Priestley, as rolling along the surface of the sea, then rising and striking the top-mast of a man of war, exploding and damaging the ship. In like manner we hear of an electrified cloud at Java, whence, without any thunder storm, there issued a vast number of fireballs which did incredible mischief. All these point out the true origin of balls of this kind, viz. an extensive accumulation of electricity bursting from one part of the atmosphere to another.

This is confirmed by an experiment related at the end of Dr. Priestley's fifth volume on air. He states that a gentleman having charged with a very powerful machine, a jar, which had the wire supporting the nob of a considerable length, and passed through a glass tube, a globe of fire was seen to issue out of it. This globe gradually ascended up the glass tube till it came to the top of the knob, where it settled, turning swiftly on its axis and appearing like a red-hot iron ball of three quarters of an inch diameter. On continuing to turn the machine, it gradually descended into the jar, which it had no sooner done, than there ensued a most violent explosion and flash, the jar being discharged and broken at the same time. We may yet gather from these experiments, that a fireball will be the consequence of a very violent electrification of any substance, provided at the same time that the air be in a very non-conducting state, so that the electricity may not evaporate into it as fast as it is collected; for this would produce only lucid streams and flashes, as in the common experiments with the Leyden phial, and it is probably an inattention to this circumstance which has hitherto prevented the repetition of the experiment above mentioned. The case is the same in thunder-storms, where an excessive accumulation of electric matter always produces fireballs, the most mischievous kind of lightning. A philosopher of the last century, it is well known, met his death from a ball of this description in attempting to draw the electric fluid from the clouds.

Balls of Hair and other substances, in natural history, covered over with a smooth, shining coat, or shell, are mentioned by zoologists, as sometimes found in the stomachs of several animals; they occur most frequently in those quadrupeds which lick the surface of their bodies, in which case they are composed of the hair that has been removed by the tongue; the hair, partly by the operation of licking, and still more by the motion of the stomach, becomes mixed and interwoven in a such a manner, that it resembles the texture of a hat, and when moulded into a round figure, receives a smooth, shining coat, or calculous incrustation. These are the sort of balls usually met with in the cow, sheep, and goat kind, especially the chamois. Every indigestible substance that is swallowed is liable, however, to give origin to these balls, or to form a nucleus for calculous concretion; hence we meet with them composed of the reedy fibres of vegetables, husks of seeds, feathers, and different animal and vegetable exuviæ. When such substances, as stones of fruit, nuts, or inorganic substances, as pebbles, coins, &c. are long detained, and have been covered with a deep incrustation, they constitute the bezoardi
See Bezoar and Ægagropila.

According to some writers the huma
is liable to the formation of balls in t
tines, in consequence of indigestible m
being regularly expelled. Cases have
lated of death ensuing from accumul
gooseberry seeds, which had been rolle
solid ball in the stomach; and Sir Ha
gives the history of a ball found in the
of a man, much afflicted with the colic, s
in circumference, of a spongy substa
which, when viewed with a microscope,
made up of small transparent hairs
wrought together like the tophus bovinu
middle was a common plumb stone, whi
as it were, the core or nucleus upon
fibrous matter had collected, stratum su
tum. Phil. Trans. No. 309, p. 2387.
in Phil. Trans. No. 282, p. 1282.

Balls of Silk Worms, or Balls of
are little cases or cones of silk, wher
insects deposit their eggs. Spiders are e
tender in their balls, which they carry a
them, adhering to the papillæ about th
Grew mentions balls or bags of a speci
worms in Virginia, as big as hen's e
containing each four aurelias.

Balls, Vegetable, in botany a
plant of a deep green color, of an irregu
rical shape, hollow within, and of differ
from an inch and a half to three inche
ameter. It probably belongs to the
genus, in the class of mosses; though
has ranged a similar plant under the
alcyonium.

BAL'LAD, *v.* & *n.*
Bal'lader,
Bal'ladry,
Bal'lated,
Bal'latry,
Bal'lett.

Fr. *balade*, Ital
A song. It on
fied a solemn an
song: the Song
mon was called
let of ballets.

generally employed to designate those
compositions which are sung in simple
by all classes of the community; an
while true to nature, illustrate the mann
toms, and opinions, of the age and c
which they belong. In composition,
is used as *ballad*-monger, *ballad*-singer,

> At certaine timis gan repaire
> Smalè birdis doune from the aire,
> And on the shipis bounds aboute,
> Ysate and song with voyce full out,
> *Ballades* and layes right ioyously.
>
> And also I have ofte assaide
> Roundel, *balades*, and vereloie
> For her, on whom myn hert laie,
> To make.
>
> Alas! I make but repetition,
> Of what is ordinary and ryalto talk,
> And *balleted*, and would be plaid o' the sta
> But that vice many times finds such loved
> That preachers are charm'd silent.
>
> And otherwhyles with amourous deligh
> And pleasing toys he would her entertaine;
> Now singing sweetly to surprize her spright
> Now making lays of love, and lover's paine
> Bransles, *ballads*, virelayes, and verses vai
> Oft purposes, oft riddles he devys'd,
> And thousands like which flowed in his

With whiche he led her fancy, and entys'd
To take to his new love, and leave her old despys'd.
Spenser's Faerie Queene.

Is there not a *ballad*, boy, of the king and the beggar?
Shakspeare.

The world was very guilty of such *ballads* some three ages since. *Id.*

I had rather be a kitten, and cry mew,
Than one of these same metre *ballad*-mongers. *Id.*

The *ballatry* and the gamut of every municipal fiddle.
Milton.

More solid things do not shew the complexion of the times so well as *ballads* and libels. *Selden.*

No sooner 'gan he raise his tuneful song,
But lads and lasses round about him throng,
Not *ballad*-singer, plac'd above the crowd,
Sings with a note so shrilling, sweet, and loud. *Gay.*

Thither no more the peasant shall repair,
To sweet oblivion of his daily care;
No more the farmer's news, the barber's tale,
No more the woodman's *ballad* shall prevail.
Goldsmith.

Ballads are ordinarily amongst the first efforts of a semi-barbarous people in poetry; and a collection of the best and most popular compositions of this kind will throw great light on the manners of a people in any stage of their civilisation. We can only attempt a slight sketch of the history of this kind of poetry in our own country. 'That our ancestors,' says Mr. Turner, (Anglo-Saxons, p. 287, c. ii.) 'had popular songs on the actions of their great or favorite characters, or on such other subjects as interested the vulgar mind, is proved by many instances, which may be traced in the ancient writers. Alfred says, in his manual, that no one had ever appeared before Aldhelm, so competent in English poetry; none had been able to compose so much, or to sing and recite it so appositely. The king mentions a popular ballad of Aldhelm's, which was in his time, (that is, nearly two centuries afterwards) sung in the streets. Malmsbury adds, that Aldhelm, anxious to instruct his countrymen, then semi-barbarous, and inattentive to their religious duties, took his station on the public bridge, as if a singer by profession, and, by mixing sacred with lighter topics, won their attention, and ameliorated their minds. Bede mentions that in a festive company the harp was sent round, that those might sing who could. It was a book of Saxon poems, says the above historian, which first allured Alfred to learn to read; and the fact that he had his children taught to read the Saxon poems, and that he himself visited the Danish camp as a harper, which, in the reign of his grandson, Anlaf imitated, prove the existence of popular songs which instructed both the child and the rude warrior.

The connexion of these compositions with the foundations of our history is clear. When Malmsbury, after narrating the reign of Athelstan, proceeds to describe his origin from Edward's amour with a shepherd's daughter, he says, The following facts I have taken rather from the songs (cantilenio) worn out by the course of time, than from books composed for the instruction of posterity.

A curious fragment of a ballad, composed by Canute the Great, says Mr. Turner, has survived to us. As this prince was sailing by the abbey, in the isle of Ely, he heard the monks chanting their psalms and anthems, and was so struck with the interesting melody, that he composed a little Saxon ballad on the occasion, which began thus:—

Meꞃe ꞅunᵹen ðe munecheꞅ binnen Ely,
Tha Ᵹnuꞇ chinᵹ ꞃevðeꞃ by
Roƿeð Ᵹniꞇeꞅ, noeꞃ ðe lanꝺ
Anꝺ heꞃe ƿe ðeꞅ munecheꞅ ꞅanᵹ.

Merry sang the monks in Ely
When Canute the king was sailing by;
Row, ye knights, near the land,
And let us hear those monks' song.

In Domesday-book, the Joculator Regis, who was evidently a minstrel, is mentioned as having lands assigned for his maintenance in Gloucestershire, Du Cange, iii. 1543; and in the battle of Hastings, Tarblessen or Taillefer, an esquire in the conqueror's army, obtained permission, as a sort of forlorn hope, to lead the van, and threw himself upon the English spears, singing the popular ballad, Chanson de Roland, Id. iv. 769. Subsequent to the conquest we meet with many genuine English songs: Horn Child: the Squire of lowe Degree: and a Lytele geste of Robin Hoode, have been pointed out as tales without foreign admixture. Richard Cœur de Lion was at once the hero of chivalry and the patron of song: his well known deliverance from captivity in Germany is connected by history with our subject; and the celebrated Scotch novelist has well availed himself of all the romantic truths of the story. Edward IV. incorporated the Minstrels by charter, and they were protected by a corporation under the government of a marshal and two wardens. This charter was renewed by Henry VIII. But by statute 39 Eliz. the profession was visited with the last disgrace, and minstrels were included and made punishable among 'rogues, vagabonds, and sturdy beggars.'

Our older ballads are all in the northern dialect: but singularly enough, on the accession of the Stuarts, we find the whole spirit of these compositions evaporate; and English minstrelsy became extinct. See Percy's Reliques of English Poetry: also Dr. Burney's History of Music: Sir Walter Scott's Minstrelsy of the Scottish Border; and Warton's History.

BALLADUK, a town in the desert of Syria 140 miles E. N. E. from Damascus.

BALLAGHAN Point, at the south-west entrance of Carlingford Bay, a cape on the east coast of Ireland. Eleven miles S. E. of Newry. Long. 6° 4′ W., lat. 53° 58′ N.

BALLAGHAN, or Ballaghy, a town of Ireland, in the county of Sligo, and province of Connaught. Twenty miles south of Sligo, and 105 from Dublin. Long. 9° 50′ W., lat. 53° 48′ N.

BALLAGHNEED, a village of Ireland, in Tyrone, with a good inn, seventy-eight miles from Dublin.

BALLAGHY, three towns in Ireland, viz. 1 in Londonderry, ninety-two miles from Dublin. 2. in the county of Mayo, ninety-seven miles from Dublin. And 3. in Sligo. See Ballaghan.

BALLAMONO, a village in the Isle of Man, near Castletown.

BALLAN, a town of France, in the department of the Sarte, seated on the Orne. Long. 20′ E., lat. 48° 10′ N.

BALLANDEN. See BALLENDEN.

BALLANI, a species of shell-fish, about a finger's length, which abound in the harbour of Ancona, and lodge among the stones. They are much valued at Rome, whither great quantities are sent.

BALLANTRAE, a small post-town and parish of Scotland, in the county of Ayr. The village stands at the mouth of the Stinchar. It carries on a salmon-fishing and some cotton manufactures. Distant twenty-eight miles S. S. W. of Ayr.

BALLAPATTY, a town of the Carnatic, in Hindostan, twelve miles west of Vencatigherry.

BALLAPILLY, a town of Hindostan, in the ceded Balaghaut district of Commim. Long. 78° 38′ E., lat. 15° N.

BAL'LARAG, *v. a.* A ludicrous and low word, purporting to overpower by word or act; to bully; to threaten. It is still used in the north, and pronounced *bullyrag*.

> On Minden's plains, ye meek mounseers;
> Remember Kingsley's grenadiers.
> You vainly thought to *ballyrag* us,
> With your fine squadron off Cape Lagos. *Warton.*

BALLARD (George), one of those occasional geniuses in lower life which shoot up without culture, was born at Campden, in Gloucestershire. Being of a weakly constitution, his parents put him to a habit-maker; and in this situation he mastered the Saxon language. The time he employed in learning it was stolen from sleep, after the labor of the day was over. Lord Chedworth, and the gentlemen of his hunt, who used to spend about a month of the season at Campden, heard of his fame, and generously offered him an annuity of £100, but he modestly told them that £60 was fully sufficient to satisfy both his wants and his wishes. Upon this he retired to Oxford, for the benefit of the Bodleian library; and Dr. Jenner, president, made him one of the eight clerks of Magdalen College. He was afterwards one of the University beadles, but died in June, 1755, rather young; which is supposed to have been owing to too intense application. He left large collections behind him, but published only Memoirs of British Ladies, who have been celebrated for their Writings or Skill in the learned Languages, Arts, and Sciences, 1752. 4to. He drew up an account of Campden church, which was read at the Society of Antiquaries, November 21, 1771.

BALLARD, CAPE, a cape of Newfoundland. Long. 52° 26′ W., lat. 46° 55′ N′.

BALLARD'S-POINT, a cape on the west coast of Ireland, in the county of Clare. Longitude 9° 32′ W., lat. 52° 42′ N.

BALLARE, in middle-age authors, to dance.

BALLARINA, in ornithology, a name under which Olina describes the white-wagtail, motacilla alba.

BALLAS, a trading place on the left bank of the Nile, Upper Egypt, where a great quantity of earthen pots of a peculiar kind are manufactured. Ten miles south of Dendera.

BALLASSA-GYARMATH, a considerable market-town and castle of Hungary, in the county of Neograd. It suffered dreadfully by a conflagration in 1800; when no less than 568 houses were destroyed, and only fifty, with the town-house, left standing.

BALLASEDERE, a town of Ireland, in the county of Sligo, 100 miles from Dublin, near a water-fall.

BAL'LAST, *v.* & *n.* } Ang.-Sax. hlæstan,
BAL'LASTURY. } be-hlæstan, to lade, load, or fraught a ship. Past participle hlæsted, be-hlæsted, loaded or laden. Dut. and Ger ballast. It is applied to that lading or loading which is used to steady a vessel in the water, or to steady any thing in its motion or action. See NAVIGATION, for the nautical illustration of the term.

> 'Mongst friends?
> If brothers:—Would it had been so, that they
> Had been my father's sons! then had my prise
> Been less; and so more equal *ballasting*
> To thee, Posthumus. *Shakspeare.*

There must be middle counsellors to keep things steady; for, without that *ballast*, the ship will roll too much. *Bacon.*

> While thus to *ballast* love I thought,
> And so more steadily t' have gone,
> I saw I had love's pinnace overfraught. *Donne.*

> Now you have given me virtue for my guide,
> And with true honour *ballasted* my pride.
> *Dryden*

> Why should he sink where nothing seem'd to press?
> His lading little, and his *ballast* less. *Swift*

Those men have not *ballast* enough of humility and fear. *Hammond's Sermons.*

BALLAST, in navigation. The principal object is to make a vessel sink to a proper depth in the water, that she may steadily carry a sufficient quantity of sail. There is often great difference in the proportion of ballast required to prepare ships of equal burthen for a voyage; the quantity being more or less according to the sharpness or flatness of the ship's bottom, which seamen call the floor.

The properly ballasting of a ship is amongst the most important duties of the skilful mariner; for, although it is known that ships in general will not carry a sufficient quantity of sail, till they are laden so deep that the surface of the water will nearly glance on the extreme breadth amidships, yet there is more than this general knowledge required; since, if she has a great weight of heavy ballast, as lead, iron, &c. in the bottom, it will place the centre of gravity too low in the hold; and, although this will enable her to carry a great sail, she will nevertheless sail heavily, and run, in rolling, the risk of being dismasted.

The ballast, therefore, should be so disposed that she may be duly poised, and maintain a proper equilibrium on the water, so as neither to be too stiff nor too crank: in the first, although the ship may be fitted to carry a great sail, her velocity will not be proportionably increased; whilst her masts are endanged by her sudden jerks and laboring: and, in the last, she ill be incapable of carrying sail without the k of upsetting. The former is occasioned by sposing too great a quantity of heavy ballast in e bottom, which brings the centre of gravity ar the keel; and, that being the centre about hich the vibrations are made, the lower it is aced, the more violent will be the motion of lling. Crankness, on the other hand, is occa-oned by disposing the ship's lading so as to ise the centre of gravity too high, which endan-rs the mast in carrying sail when it blows rd: for when the masts lose their perpendi-lar, they strain in the nature of a lever on the rouds, which increases as the sine of their liquity.

As a general principle, it may, therefore, be served, that ballast should be placed round d near the centre of gravity of the ship, because will prevent the pitching being so violent as it would be if it were carried much fore or aft of that point. When a vessel is passing over a wave, she will be at one time supported below the centre of gravity; and immediately after, her head will incline downwards, or, as it is termed, she will pitch; when it is evident, that the nearer the weight is to the point over which the vessel is supported, the less violent will the motion be. But this rule stands in need of frequent modifications: for which reason, a large quantity of shifting ballast is allowed in the Royal navy. Indeed, throughout the whole practice, as we are finding a remedy for one fault, we are in danger of running into another; and much of the final distribution of ballast depends upon knowing well the peculiarities of the vessel, and observing experimentally, how different winds and calms affect her.

The following was, until lately, the Ballast allowed to our Men of War:

Guns.	Tonnage.	Iron Tons.	Shingle Tons.	Guns.	Tonnage.	Iron Tons.	Shingle Tons.
110	2290	180	370	36	870	65	160
100	2090	180	370	32	700	65	140
98	2110	160	350	28	600	60	100
90	1870	160	350	24	500	50	80
80	1620	140	300	22	450	50	70
74	1700	80	270	20	400	50	60
64	1370	70	260	Sloop.	300	50	40
50	1100	65	170	Brig.	160	30	15
44	900	65	160	Cutter.		20	Seldom
38	930	70	170	Sloop.		15	any.

The general practice then was, first, to stow iron ballast fore and aft, from bulkhead to lkhead, in the main hold, next to fir cants, iled on the limber strakes, on each side of the lson, five or more inches clear of the limber ards; and winged up three or four pigs above e floor-heads in the midships, or bearing part the ship, with two tiers of pigs in the wake the main hatchway, &c. The shingle ballast as spread and levelled over the iron ballast, on hich was stowed the lower tier of water-casks, ith the bungs up, and the bilge clear of the des. The midship tiers were first laid, and e casks sunk about one quarter of their dia-eter into the shingle; the sides being filled in ith small casks, as half-hogsheads, &c.

Since the introduction of iron tanks, shingle allast has been altogether laid aside, and iron allast only employed, the present proportion f which, according to the practice of the navy, s as follows:—

Table of the proportion of Iron Ballast at present llowed in the navy, in proportion to their tonnage.

To all three-deckers, $\frac{1}{8}$th of computed tonnage.

To two-deckers and oak frigates $\frac{1}{10}$th ditto.
To fir frigates $\frac{2}{25}$ths of ditto.
To 22-gun ships and sloops, $\frac{1}{5}$th ditto.
To brigs, sloops, &c. $\frac{1}{4}$th ditto.

Smaller vessels are not submitted to these rules; but are ballasted as circumstances may require, according to the judgment of their officers. In ships of the line, sixteen ton of the above, called shingle ballast, is moveable as circumstances require, and half that quantity to frigates.

Additional ballast, to the amount of one-third, and even one-half, of the original quantity is sometimes, however, demanded: and the table only exhibits the official and ordinary allowance.

In the merchant-service, the stowage consists, besides the other ballast, of casks, cases, bales, boxes, &c. all carefully wedged off from the bottom, sides, pump-well, &c. and great attention is paid that the most weighty materials are stowed nearest to the centre of gravity, or bearing of the ship; and higher or lower in the hold agreeably to the form of the vessel. A full low-built vessel requires them to be stowed high up, that the centre of gravity may be raised, to keep her from rolling away her masts, and from being too stiff and laborsome; as, on the contrary, a narrow high-built vessel requires the most weighty materials to be stowed low down, nearest the kelson, that the centre of gravity may be kept low, to enable her to carry more sail. To yachts and other small vessels, both in the navy and merchant-service, the ballast is sometimes lead, worked between the timbers.

By the 19 Geo. II. it is enacted, that if any master or owner, or any person acting as master of any ship or other vessel whatsoever, shall cast, throw out, or unlade, or if there shall be thrown out, &c. of any vessel, being within any haven, port, road, channel, or navigable river within England, any ballast, rubbish, gravel, earth, stone, wreck, or filth, but only upon the land, where the tide and water never flows or runs; any one or more justices for the county or place where, or near which the offence shall be committed, upon the information thereof, shall summon or issue his warrant for bringing the master or owner of the vessel, or other person acting as such, before him; and, upon appearance or default, shall proceed to examine the matter, and upon proof made thereof, either by confession of the party, or on view of the justice, or upon the oath of one or more creditable witnesses, he shall convict the said master, &c. and fine him at his discretion for every such offence, any sum not exceeding £5, nor under 50*s.* &c.; and for want of sufficient distress, the justice is to commit the master, or person acting as such, and convicted as aforesaid, to the common jail or house of correction, for the space of two months, or until payment of the penalties.

Besides the above general act, there are the 6 Geo. II. c. 29, and the 32 Geo. II. which regulate the ballasting of merchant-vessels in the river Thames, placing it under the direction of the corporation of the Trinity-house.

To trench the ballast, denotes, to divide the ballast into two several parts or more, in the ship's hold, commonly done to find a leak in the bottom of a ship, or to undock her.

Shooting of the ballast is when it runs over from the one side to the other. Hence, it is that corn, and all kinds of grain, is dangerous lading, for that is apt to shoot. To prevent which, they make poucles; that is, bulkheads of boards, to secure it from moving about.

BALLATAR Crag, a rocky hill in Aberdeenshire, whose tremendous impending rocks seem to threaten the astonished traveller with instant destruction.

BALLATIONES, in middle age writers, dancings.

BALLATOONS, large heavy luggage-boats, used for carrying wood by the river from Astrakhan and the Caspian Sea from Moscow. They will carry from 100 to 200 tons, and have from 100 to 120 men employed to row and tow them along.

BALLANTYNE (John), was a native of Kelso, in Roxburgshire; and at an early age entered into business as a printer. He, with his brother, distinguished himself by the great improvement of the art, evinced in the extensive publications which have of late years issued from their press. He was at one time a proprietor of the Kelso Mail; and subsequently ushered into the world the publications known as the Waverly novels. He was possessed of sufficient literary talents to be thought at one time to be their author. He died in 1821.

BALLEBHODAN, the original name of the parish of Ardchattan, Argyleshire.

BALLENA, Punta de la, a point of land on the east coast of the island of Margaritta: another in Chili, on the coast of the province of Quillota: another in the kingdom of Quito, and on the shore of the South Sea.

Ballena, a river of Florida, which falls into the Atlantic.

BALLENDEN (Sir John), a Scottish poet, in the reign of James V., descended from an ancient family in that kingdom. His father, Mr. Thomas Ballenden, of Auchinoul, was director to the chancery in 1540, and clerk register in 1541. From one of his poems we learn, that in his youth he had some employment at the court to king James V. and that he was in great favor with that prince. Having taken orders, and been created D.D. at the Sorbonne, he was made canon of Ross, archdeacon of Moray, and clerk register; but was afterwards deprived of that employment by the factions of the times. However, in the reign of Mary, he recovered that office, and was one of the lords of session. Being a zealous papist, he, in conjunction with Dr. Laing, was extremely assiduous in retarding the progress of the reformation; till at last, finding the opposition too powerful, he quitted Scotland, and went to Rome, where he died in 1550. He is generally esteemed one of the best Scottish poets of that age. His works are, 1. The History and Chronicles of Scotland of Hector Böies (Boethius), translated by Mr. John Ballenden, Edinb. 1536. 2. Cosmography to the History of Scotland, with a Poetical Proem. 3. A Description of Albany. 4. Translation of Boethius's Description of Scotland. 5. Epistles to king James V.—Bale says he had seen these letters. 6. Several poems in Carmichael's Collection. 7. Virtue and Vyce, a poem addressed to king James V.

BALLENGARY, a town of Ireland, in the county of Kerry, on the mouth of the Shannon, near Ardfert.

BALLENSTEDT, an ancient county and castle in the principality of Anhalt-Bernburg, Germany, on the confines of Quedlingburg. It is the ordinary residence of the prince of Anhalt, and contains a riding-house, a theatre, and beautiful gardens. At the foot of a hill on the rivulet of Getel. Population 2500. Eighteen miles south-west of Bernburg, twenty-seven north-east of Nordhausen. Long. 11° 25′ E., lat. 51° 45′ N.

BALLERINI (Peter and Jerome), two brothers, Italian priests, natives of Verona. Peter was born in 1698, and Jerome in 1702. They wrote in conjunction, several learned and ingenious poems, and published various editions of ecclesiastical authors.

BALLEROY, a town and castle of France, in Normandy, with 1180 inhabitants, and several iron mines, and forges. It stands on the Drome, and is the head of a canton, in the department of Calvados, arrondissement of Bayeux. Seven miles S.S.W. of Bayeux, eighteen south of Caen.

BALLERUS, in ichthyology, a species of fresh water fish of the leather mouthed kind, which appears to be the same with the carcassius or carcassi tertium genus.

Ballerus is also a name given by Aristotle to that species of cyprinus called blicca and pleysta, and pallerus, by modern writers.

ET, a dramatic fable represented by
usic and dancing. The origin of the
to be traced to the meretricious taste of
ian courts, and succeeded the more
is but more manly amusement of the
ent. The interview between our Henry
d Francis I. of France, in the field of
of gold, presents us with an early speci-
hese entertainments. In the next cen-
reached the summit of their glory in
ndid pomps of the courts of Tuscany
aine. The genius of Ben Jonson, and
of Shakspeare, was matured amidst the
connected with the Italian ballet: but it
most zealous patron in Louis XIV.;
ably the most magnificent ballet ever
d, was that which this prince comman-
bore a part in, in the year 1664. In
this memorable fète, the name of the
has been given to the spot of its cele-
and the theatres of England, France,
y, have been always striving since in
warfare, to sustain the public par-
r these spectacles.

TS, or Balls, in heraldry, make a fre-
earing in coats of arms, though never
; for, according to their several colors
e different names; as besants, when the
or; plates when argent; hurts when
orteaux when gules; pomies when vert;
or agresses when sable; golpes when
orenges when tanne; and guzes when

LETTE, *n. s.* Fr. *ballette.* A dance
some history is represented.

LEXARD (N.), a citizen of Geneva, born
He wrote a treatise on the physical
n of children, which gained the prize
ociety in Holland; and a dissertation on
tion, what are the principal causes of the
of children? He died at Geneva in

LI (Joseph), a scholastic divine, born at
in Sicily. He was a canon of Bari, in
dom of Naples; and author of De Fæ-
e Dei, and De Morte Corporum Natura-
He died at Padua in 1640.

LIACE, in ancient geography, a town of
in the vicinity of Apollonia.

LIAGE, a duty payable to the city of
for the goods and merchandise of aliens,
g to the charter 16 Car. II.

LIANI (John Baptist), a native of Ge-
n in 1586. He rose to be a member of
e, and wrote a treatise on the Natural
of Heavy Bodies, 1646. He died in

LIARDS, *n. s.* From ball and yard, or
push it with. A play at which a ball is
y the end of a stick; now corruptly
lliards, Dr. Johnson says; but *billiards*
corruption, being the Fr. *billard*, from
term for the ball used in playing.

dice, with cards, with *balliards* far unfit,
shuttle-cocks misseeming manly wit.
Spenser.

Let it alone; let us to *billiards*;
armian.
Shakspeare. Antony and Cleopatra.

BALLIBAY, a market, fair, and post town in the county of Monaghan, Ireland, seventy-six miles N.N.W. of Dublin. The living is a rectory and vicarage, in the Clogher diocese.

BALLIMORE, a town of Ireland, in the county of Westmeath. It was taken in 1691 by General Gingle; and burnt by the military, in the rebellion of 1798. Distant from Athlone ten miles north, and 72 from Dublin.

BALLIN (Claude), a celebrated French artist, born in 1615. His father was a goldsmith, and under him he learned that business. When about nineteen years of age, he displayed uncommon genius, by making four silver basins, on which were represented the four ages of the world. These were purchased by Cardinal Richelieu, and he was employed to make four vases, after the antique, to match them. He afterwards executed handsome pieces for Louis XIV. and after the death of Varin, he succeeded as director of the mint, for casts and medals. He died in 1678.

BALLINA, or Belleek, a town of Ireland, in the county of Mayo; fourteen miles north of Castlebar, and 183 from Dublin. It has a considerable salmon fishery; and in 1798 was taken by the French troops who landed in Ireland under General Humbert.

BALLINACARGY, a town of Ireland, in West Meath, about forty-six miles from Dublin.

BALLINACHORA, a town of Ireland, near Middletown, in Cork.

BALLINACOURTY, Point, a cape on the south coast of Ireland, in the county of Waterford, on the north side of Dungarvan Bay. Distant four miles east of Dungarvan.

BALLINAGAR, a town of Ireland, in King's county, Leinster, forty-one miles from Dublin.

BALLINAKIL, a market town of Ireland, in Queen's county; a borough previously to the Union. Here are woollen manufactures, and the ruins of a castle, fourteen miles west of Carlow, fifty-eight from Dublin.

BALLINAKILL Harbour is on the west coast of Ireland. Forty miles north-west of Galway. Long. 9° 58′ W., lat. 53° 34′ N.

BALLINALACK, a town in West Meath, Ireland, about forty-eight miles from Dublin.

BALLINAMORE, a town of Ireland, in the county of Galway, eighty-four miles from Dublin.

BALLINANAGHT, a town of Ireland, in the county of Cavan, fifty-four miles from Dublin.

BALLINASLOE, a town of Ireland, in the county of Roscommon, ninety miles from Dublin. It is noted for its great fairs of cattle, wool, &c. The town is neat and improving; it has two breweries, barracks for cavalry and infantry, and possesses a communication, by still water, with the river Shannon. The fairs are the largest held in Ireland, 100,000 sheep and 10,000 black cattle being annually sold here.

BALLINGARRY, a town of Ireland, in the county of Limerick, 145 miles from Dublin.

BALLINROBE, a town of Ireland, in Mayo, where the assizes were formerly held. It is 147 miles from Dublin. Long. 9° 10′ W., lat. 53° 40′ N.

BALLINTOGHER, a town of Sligo, Ireland.

BALLINTOY, a town of Ireland, on the coast of Antrim. It produces coals. It has a tolerable good harbour, which has been improved by a parliamentary grant. A short distance to the eastward is the small island of Carrick-a-rede, separated from the land by a chasm of sixty feet, of a frightful depth, which is passed by means of two cables stretched across.

BALLINTRA, a village and parish of Ireland, on the coast of Antrim. Several ancient fortifications are within its precincts, and there is a cromlech near the village. Other antiquities are also found here. It is twenty miles north of Ballymena, and 150 from Dublin.

BALLISTA, Lat. from βαλλειν, to shoot, a machine used by the ancients for shooting darts; it resembled in some measure our cross bow. Vegetius informs us, that the ballista discharged darts with such rapidity and violence, that nothing could resist their force: and Athenæus adds, that Agistratus made one of little more than two feet in length, which shot darts 500 paces. See ARTILLERY.

BALLISTA, in practical geometry, the geometrical cross, called also Jacob's staff. See CROSS STAFF.

BALLISTA, or OS BALLISTÆ, is a name given by some anatomists to the first bone of the tarsus, otherwise called talus and astragalus.

BALLISTARII, or BALLISTRARII, in antiquity, slingers or soldiers who fought with the ballistæ. There are two kinds of ballistarii; the one, called also manuballistarii, or manuballistæ, cast stones and other missive weapons, with the hand. The others, called also carroballistarii, or carroballistæ, made use of a machine. The ballistarii were scarcely heard of before the age of Constantine.

BALLISTARIUS is also used, in writers of the middle age, for a cross bowman, or arbaletier.

BAL'LISTER. See BALLUSTER.

BALLISTEUM, or BALLISTRÆA; from βαλλω, to toss, to throw, or to shoot; in antiquity, a military song or dance used on occasions of victory. Vopiscus has preserved the ballisteum sung in honor of Aurelian, who, in the Sarmatian war, was said to have killed forty-eight of the enemy in one day with his own hand. The ballistea were a kind of popular ballads, composed by poets of the lower class, without much regard to the laws of metre.

BALLISTICA, or BALLISTICS the art of throwing heavy bodies. F. Mersennus has published a treatise on the projection of bodies, under this title.

BALLIUM, old law Latin, bail.

BALLIUM, in archæologia, the court of a fortified castle. The outer ballium was immediately within the gates, separated by a wall from the inner ballium, which contained the apartments for the garrison and the keeper. St. Peter, in the Bailey at Oxford, stands in the outer ballium of the castle. The Old Bailey and New Bailey in London were in similar positions in regard to the walls of that city; and hence are their names.

BALLIVUS. See BAILIFF.

BALLOCH, a lake of Perthshire, in the parish of Muthil, about half a mile in circumference.

BAL'LON, } Fr. *balon*, a little ball or pack;
BAL'LOON. } also a foot-ball. Dut. *balloen*, Germ. balluyn, Span. *balon*, Ital. *ballone*. A name given to a certain game played with a ball filled with wind.

> Many other sports and recreations there be much in use, as foot-ball, *ballowne*, quintan, &c and many such, which are the common recreations of the country folks. *Burton's Anatomy of Melancholy.*

> SIR PET. Faith, I was so entertained in the progress with one count Epernoun, a Welsh knight: we had a match at *baloon*, too, with my lord Warham, for five crowns.——O, sweet lady, 'tis a strong game with the arm. *Eastward Hoe.*

BALLON, or BALLONE, an ancient castle, seated on the sea-coast, in the parish of Tarbat, in Ross-shire; which exhibits a monument of the taste and grandeur of former ages.

BALLON, a town in the province of Maine, France, on the Orne, with 3560 inhabitants. It is the chief place of a canton in the department of the Sarthe, arrondissement of Le Mans; and has manufactures of stamine and other linen cloths. Ten miles north-east of Le Mans, sixteen south of Alençon. Also a town of France, in the department of the Lower Charente, arrondissement of Rochefort; nine miles south-east of La Rochelle.

BAL'LOON, *n. s.* In chemistry, a large globular glass flask, with a short neck, generally used as a receiver in distillations.

In architecture, a ball or globe placed on the top of a pillar.

In fire-works, a ball of pasteboard stuffed with combustible matter, which, when fired, mounts to a considerable height in the air, and then bursts into bright sparks resembling stars.

In aerology, a hollow vessel of silk, which is filled with inflammable air, and ascends with considerable weight annexed to it, into the atmosphere. Though of modern introduction, by the following citation it looks as if the existence of such a machine had been known 150 years since: 'Like *balloones* full of wind, the more they are pressed down, the higher they rise.'—*Hewyt's Sermons* (1658) p. 115. See AERONAUTICS.

BALLOON, in a general sense, signifies any spherical hollow body, of whatever matter it be composed, or for whatever purposes it be designed.

BALLOON, in the French paper trade, is a term for a quantity of paper, containing twenty four reams.

BALLOON likewise denotes a kind of game something resembling tennis. The ballon is played in the open field, with a great round ball of double leather blown up with wind, and thus driven to and fro with the strength of a man's arm, fortified with a brace of wood.

BALLOON, or BALLOEN, is particularly used among voyagers for the state barges of Siam. These balloons are a kind of brigantines, managed with oars, of very odd figures, as serpents, sea-horses, &c.; but, by their sharpness and number of oars, of incredible swiftness. They are [illegible] to be made of a single piece of timber, of uncommon length; they are raised high, and much decorated with carving at head and stern: some are gilt over, and carry 120 or 150 rowers on each side. The oars are either plated over with silver, gilt, or radiated with gold; and the dome or canopy in the middle, where the company is placed, is ornamented with some rich stuff, and furnished with a ballustrade of ivory, or other costly matter, enriched with gilding. The edges of the balloon just touch the water, but the extremities rise with a sweep to a great height. Some are adorned with a variety of figures, made of pieces of mother of pearl inlaid: the richer sort, instead of a dome, carry a kind of steeple in the middle: so that, considering the slenderness of the vessel, which is usually 100 or 120 feet long, and scarcely six broad, the height of two ends, and of the steeple, with the load of decorations, it is a kind of miracle that they are not overset.

Balloon, or **Ballot**, in the French glass trade, signifies a certain quantity of glass plates, smaller or greater according to their quality. The balloon of white glass contains twenty-five bundles, of six plates per bundle; but the balloon of colored glass is only twelve bundles and a half, and of three plates to a bundle.

Balloon, Air. See Aeronautics, &c.

BAL'LOT, *v.* & *n.*
Ballota'nt,
Ballot'ation,
Ballot'in.

Fr. *ballotter*, Ital. *ballotare*, from Gr. βαλλω, from *ball*, Skinner. A particular mode of election. This is managed by putting little balls or tickets of different colors, black and white, privately into a box, which has two compartments; by counting the balls it is known what is the result of the poll, without any discovery of the respective voters.

> The greatest of the parliament men hated this design of rotation and *balloting*, as being against their power. *Wood's Atheniæ Oxonienses.*

> Whereupon eight *ballotins*, or pages, take eight of the boxes, and go four on the one side, and four on the other side of the house; and every magistrate and senator holds up a little pellet of linen as the box passes, between his finger and his thumb, that they may see he has but one, and then puts it into the same. *Harrington's Oceana.*

> No competition arriving to a sufficient number of balls, they fell to ballot some others. *Wotton.*

> The election of the duke of Venice is intricate and curious, consisting of ten several *ballotations*. *Id.*

> Giving their votes by *ballotting*, they lie under no awe. *Swift.*

BALLOTA, White Horehound: in botany; a genus of the gymnospermia order, and didynamia class of plants; ranking, in the natural method, under the forty-second order, verticillatæ. The calyx has five teeth, with ten striæ; and the upper lip of the corolla is crenated. It is a common weed growing on the sides of banks in most parts of England, as also in walks near towns and villages in Scotland; so is seldom admitted into gardens. The flowers are in whorls, upon branched peduncles, and lean on one side of the stalk; they are commonly of a dull red color, but sometimes white. It was formerly used in hysteric cases, but is now fallen into disuse. The Swedes reckon it an almost universal remedy in the diseases of their cattle. Horses, cows, sheep, and goats, refuse to eat it.

BALLOTADE. See Balotade.

BALLRIENAN, a pleasant peninsula of Ireland, in the county of Louth; in which there are relics of a Druid's Grove; supposed to have been the chief seat of the Arch-Druid.

BALL's Bay, a bay on the east coast of Norfolk island, in the South Pacific.

Balls, a river of West Greenland, which runs into the sea, in long. 50° 10′ W., lat. 64° 30′ N.

Ball's Pyramid, a small island in the South Pacific, discovered by lieutenant Ball in 1788. Long. 159° E., lat. 31° 35′ S.

BALLSTOWN, a thriving town of the state of New York, situated in Saratoga county, thirty miles north of Albany.

Also a town of North America, in Lincoln county, district of Maine, 195 miles north-east of Boston.

BALLUNTEE, a town of Hindostan, in Orissa, thirteen miles south-east of Cuttack.

BALLUSTER. See Baluster.

BALLUSTRADE. See Balustrade, and Architecture, Index.

BALLY, a small island in the Eastern seas, separated from the west coast of Bachian by a channel about five miles wide. Lat. 0° 30′ S.

Bally, a large town on the east coast of the island of Lombhook, about fifteen miles from the entrance of the strait of Alass. The inhabitants trade principally for rice with the Dutch settlements. Long. 116° 28′ E., lat 8° 31′ S.

Bally, a Gaelic word, analagous to Bal, which makes part of the names of above 100 places, mostly small towns, or villages, in Ireland; of which we can only notice a few of the principal. The word seems to be a corruption of the term Ballibetagh, anciently used to express a town land able to maintain hospitality.

Ballycastle, a sea-port of Antrim, about thirty miles north of Carrickfergus, and 180 from Dublin: noted for its chalybeate spring and collieries.

Ballyconnel, a town of Cavan, in Ulster, sixty-seven miles from Dublin, and eleven north-east of Cavan.

Ballycotton Bay, a bay on the north-west coast of Ballycotton island.

Ballycotton Island, an island of St. George's channel, on the south-west coast of Ireland, four miles off Cloyne. Long. 7° 59′ W., lat. 51° 50′ N. It is a great resort of sea-fowl, and porpoises frequently come ashore here.

Ballydovilin Bay, a bay on the south-west coast of Ireland. Long. 9° 32′ W., lat. 51° 27′ N.

Ballyela Bay, a bay on the west coast of Ireland, 128 miles east of the south Arran islands.

Ballygamboon, in Kerry, Munster; noted for producing great quantities of cyder.

Ballygilly Head, a cape on the east coast of Ireland.

Ballyhays, a market town of Ireland, county of Cavan, fifty-seven miles from Dublin, and once a considerable place.

Ballyholm Bay, on the coast of Down, between Carrickfergus and Copland islands.

Ballyhooly, in Cork, seated on the Blackwater, in a woody country, 111 miles from Dublin.

Ballyless Bay, a harbour on the north-west coast of Ireland, due west from Sligo Bay, and east from Broad-haven. Dunsinehead is its eastern limit.

Ballymahon, a town in Longford, sixty-eight miles from Dublin. Long. 7° 56′ W., lat. 52° 31′ N.

Ballymena, a market town of Antrim, on the river Maine, Ireland. It has a town-house, in which the quarter-sessions are held; and a linen manufacture is carried on here. Twenty miles north-west of Belfast, and 132 north of Dublin.

Ballynahinch, a market town of Down, in Ireland, ninety-four miles from Dublin. In its neighbourhood is a chalybeate spring. Here, in 1798, the rebels were defeated after a bloody engagement on Lord Moira's estate, and the greater part of the town was at that time destroyed.

Ballyquinton Point, a cape of Ireland, seven miles east of Down-patrick.

Ballyraghan Bay, a bay on the west coast of Ireland, in the north part of the county of Clare. Long. 9° 6′ W., lat. 53° 7′ N.

Ballyshannon, a town of Ireland, in the county of Donegal, situated on a bay at the mouth of a river flowing from Lough Erne, which is here crossed by a bridge of fourteen arches. Here are two fisheries of eels and salmon. Fish and grain are the chief exports. The imports, timber, rock salt, iron, earthenware, and other commodities in small quantities. Distant forty miles south-west of Londonderry, and 127 from Dublin.

Ballytore, a beautiful village, on the river Gris, in Kildare, thirty-five miles from Dublin.

Ballyvogy Head, a cape in Cork, opposite to Mizen Head, between which there is a large bay.

BAL'M, *v.* & *n.* } Gr. *βαλσαμον*, Lat. *balsamum*, Fr. *balsarme*, *baulme*,
Balm'y, }
Ital. *balsamo*, Goth. *balsan*, Ang.-Sax. baldsame, balzame, Germ. and Swed. *balsam*, Dut. *balsem*. Applied to a fragrant shrub, as balm-mint; the sap of a shrub, as balm of Gilead; to fragrant ointment; to any thing fragrant, sweet-smelling, soothing, lenifying, lulling, mitigating, either literally or metaphorically. To *balm*, is to wash with *balm*, or any thing softening, fragrant, and antiseptick. See Embalm. Of *balm*-mint, the species are 1. garden *balm*; 2. garden *balm*, with yellow variegated flowers; 3. stinking Roman *balm*, with soft hairy leaves.'—*Miller*. ' Balm of Gilead is the juice drawn from the balsam-tree, by making incisions in its bark. Its color is first white, soon after green; but when it comes to be old it is of the color of honey. The smell of it is agreeable, and very penetrating; the taste of it bitter, sharp, and astringent. As little issues from the plant by incision, the *balm* sold by the merchants is made of the wood and green branches of the tree, distilled by fire, which is generally adulterated with turpentine.'—*Calmet*. ' It seems to me that the zori of Gilead, which we render in our Bible by the word *balm*, was not the same with the balsam of Mecca, but only a better sort of turpentine, then in use f cure of wounds and other diseases.'—*Prid Connex.*

> In May that mother is of monethes glade,
> That the freshe flouris all, blew, white, and
> Ben quicke ayen, that winter ded had made,
> And full of *baume*, is fleting euery mede.
> *Ch*
>
> But forbeare to speake
> Of baths, or *balming*, or of beauty now.
> *Chapman. Homer's O*
>
> We saw thee in thy *balmy*-nest,
> Bright dawn of our eternal day;
> We saw thine eyes break from the east,
> And chase the trembling shades away
> *Cra*
>
> Upon an hill a bright flame I did see,
> Waving aloft with triple point to sky,
> Which like incense of precious cedar tree,
> With *balmy* odours fill'd th' ayre farre and
> *Sp*
>
> Where many groomes and squyres ready w
> To take him from his steed full tenderly,
> And eke the fayrest Alma mett him there,
> With *balm* and wine, and costly spicery,
> To comfort him in his infirmity.
> This is most strange;
> That she, that even but now was your best objec
> The argument of your praise, *balm* of your age,
> Most best, most dearest, should, in this trice of
> Commit a thing so monstrous, to dismantle
> So many folds of favour. *Shakspeare.*
> As bees
> In spring time, when the sun with Taurus rid
> Pour forth their populous youth about the hiv
> In clusters; they among fresh dews and flow
> Fly to and fro, or on the smoothed plank,
> The suburb of their straw-built citadel,
> New rubb'd with *balm*, expatiate and confer
> Their state-affairs. *Mi*
> Now gentle gales
> Fanning their odoriferous wings dispense
> Native perfumes, and whisper whence they st
> Those *balmy* spoils.
> Publicola, with healing hands shall pour
> *Balm* in their wounds, and shall their life
> Greek arts, and Roman arms, in her conjoin'd,
> Shall England raise, relieve oppress'd manki
> *Mar*
>
> So weak are human kind by nature made,
> Or to such weaknes by their vice betrayed
> Almighty vanity! to thee they owe
> Their zest of pleasure and their *balm* of woe.
> *Y*
>
> O smile, ye heavens, serene; ye mildews wa
> Ye blighting whirlwinds spare his *balmy* prime,
> Nor lessen of his life the little span. *Be*

Balm, in botany. See Melissa.

Balm, or **Balsam**. See Balsam.

Balm mint. See Balm.

Balm of Gilead, the English name of dracocephalum canariense, or canary dra head.

Balm of sulphur. See Sulphur.

BALMURÆUM, the name given by Les the ancient abbey of Balmerino, which founded A. D. 1229, by king Alexander II. his mother Emergarda, widow of William Lion. That princess lies interred in the a church. See Balmerino.

BALMURENACH, the original name of B merino.

AGOWN, a small river of Scotland, in
re, which bounds the parish of Kilmuir
n the east.

AHUAICH, one of the western isles of
, on the coast of Argyllshire, and in the
Jura, on the north end of that island.
vart, minister of Jura and Colonsay, in
tical report of these parishes to Sir J.
states the population of this island in
28 families, and 132 souls. It abounds
ellent slates.

AVES (Henry), a Scottish protestant
orn in Fife, in the reign of James V.,
cated at St. Andrew's. He went to
o finish his studies; and returning to
, was admitted into the family of the
rran, then regent; but in 1542 the earl
him for having embraced the protes-
ion. In 1554 he joined, says Mackenzie,
lerers of cardinal Beaton; for which he
lared a traitor, and excommunicated.
at party were besieged in the castle of
rew's, they sent Balnaves to England,
rned with a considerable supply of pro-
nd money; but being at last obliged to
to the French, he was sent with the
he garrison to France. He returned to
about 1559; and having joined the con-
, he was appointed one of the commis-
treat with the duke of Norfolk on the
ueen Elizabeth. In 1563 he was made
e lords of session, and appointed by the
ssembly, with other learned men, to re-
Book of Discipline. Knox, his fellow-
gives him the character of a very
nd pious divine. He died at Edinburgh
He wrote, 1. A Treatise concerning
ion, Edinburgh, 1530, 8vo. 2. A Cate-
Confession of Faith, 1584, 8vo.

EAL', *ad.* These, with *bain* and
EARY, *n. s.* *bagnio*, are derived from
EATION, the Lat. *balneum*, which
'ATORY, *ad.* signifies a bath. To wet,
to bathe.

> attribute this *balneal* heat to the sun, whose
> ing beames penetrating the pores of the
> heat the waters. *Howell's Letters.*

> *lnearies* and bathing-places he exposeth unto
> er setting. *Brown's Vulgar Errours.*

> head may be disturbed by the skin, it may
> way be relieved, as is observable in *balnea-*
> fomentations of that part. *Id.*

EARII Servi, in antiquity, servants
lants belonging to the baths. Some were
d to heat them, called fornicatores;
ere denominated capsarii, who kept the
of those that went into them; others
whose care it was to pull off the hair;
ctuarii, who anointed and perfumed the

EARIUS Fur, or Balneariuм, Fur,
ity, a kind of thief who practised steal-
clothes of persons in the baths. This
s reckoned a kind of sacrilege; for the
were sacred; hence they were more
punished than common thieves, who
of private houses. The latter were ac-
with paying double the value of the thing stolen; whereas the former were punished with death.

BALNEGLERA, a town of Ireland, in the county of Armagh.

BALNE'UM, *n.* a vessel used in chemistry.

Balneum, a term used by chemists to signify a vessel filled with some matter, as sand, water, or the like, in which another is placed that requires a more gentle heat than the naked fire. See Chemistry, Index.

Balneum Arenosum, a sand bath.

Balneum Foeni, a hay bath, is when a body is laid to digest in moist hay, whose heat is likewise directed by the application of water.

Balneum Mariæ is by some so called, as being supposed to have been first invented by the blessed Virgin; but by others, with more propriety, it is called

Balneum Maris, or sea bath, in regard the vessel here floats as it were in a sea. Here the cucurbit is placed in hot water, which warms the matter contained, and disperses it for exhalation.

Balneum Minerale, or mineral bath, is used by some chemists for aqua regia.

Balneum Roris, or Roritum, is a furnace where the cucurbit, or distilling vessel, is only suspended over the vapor of water, and not in contact with the water itself.

Balneum Siccum, or Arenosum, a dry or sand heat.

Balneum Vaporarium, or the vapor bath; the same with Balneum roris.

BALOLY, a town of Hindostan, in the district of Dowlatabad, thirty-five miles E. N. E. of Oudighir.

BALONGO, three islands in the bay of Bengal, near the coast of Arracan. Long. 93° to 93° 20′ E., lat. 19° 50′ to 20° 5′ N.

BALONICH, in the ancient materia medica, a name given by Avicena, Averrhoes, and others, to a kind of camphor, which they describe as coarse, brown, and of less value than the other sorts. This is probably the same with our rough camphor, as brought over to us from the East Indies.

BALOOCHISTAN, Balochasthan, or, according to some, Belujistan, a large province west of the Indus, bounded on the north by Seistan in Persia and Candahar, on the south by the sea, on the east by the province of Sinde and Shekarpoor, and on the west by Mekran in Persia. It comprehends all that space of territory lying between the 25° and 30° of north latitude, and the 62° and 69° of east longitude. The political limits are, however, difficult to define with accuracy, from the perpetual fluctuations to which they are subject. The province is extremely mountainous, peopled by warlike semi-barbarous tribes, and was scarcely known to Europeans till the years 1809 and 1810, when it was visited by Mr. Pottinger and a few other officers in the East India Company's service. At that time the whole country of Baloochistan was divided into the following provinces:—1 Those of J'háláwán and Sáráwán, and districts of Kelât. 2. Macrán and Les. 3. Kohistan, the mountainous region west of the desert. 4. The desert. 5. Cach Gandávah and the district of Herrend Dájel. 6. The province of Sind'h.

[illegible] at present are Jala- [illegible] Mekran, Lus and Mutch, [illegible] territories not properly [illegible] Khan, the present Ameer of [illegible]

[illegible] Baloochistan Proper commences [illegible] twenty-five miles N. E. from Bayla, [illegible] 35′ N., and extends to Nooshky, [illegible] miles N. W. from Kelat, in lat. 30° N. The country is described generally as a con- [illegible] of mountains, through which the [illegible] for the most part in water-courses, and the beds of small rivers.

The principal mountainous range, called by Mr. Pottinger Brahúïc, from the Brahúís who inhabit it, rises abruptly out of the sea to a considerable height at cape Mowárí, the Monze of the Maps, in lat. 25° N., and long. 66° 58′ E. whence it runs in a north-east direction, afterwards to the north, and at last resuming its original course sinks into moderate hills and unites with the lowest ridges of the chain that traverses Afghánistán. Anciently this chain formed the separating boundary between Persia and India. Near the Indian Ocean it is not more than thirty miles in breadth; but about the same distance from the shore it breaks into a variety of branches, and stretches over the whole country, west and north, in which direction it unites itself with the Persian ranges, ending abruptly in the sea, or sinking in the sandy region which divides the cultivable territory from the ocean. The general inclination of the boldest ridges is from the north-east to the south-west, whence it becomes highly probable that the Brahúïc range is a prolongation of the Hindù Cush, the Emodus of the ancients, in which the Hezárah range or Paropamisus, extending as far as the Caspian, has its origin. With this latter chain the western extremity of the Brahúïc mountains, extending north beyond the main body of highlands, is thought to be united; a branch which lying between Seistan and Kirmán forms the eastern boundary of the Persian empire. Another division of this range extends from their south-western angle, and, running nearly parallel with the main heights in that direction, forms at last a junction with the mountains of Láristan, in Persia, and sends out many collateral ramifications terminating in headlands on the coast of Macrán. In the western parts of that province the mountains recoil on the principal body, and form a complete mass of mountains, irregularly crowded, which the natives denominate Kohistàn, or the highlands. The length of this range is stated at 350 miles, and the breadth of the loftiest ridge at nearly 200. The town of Kelât stands upon the highest level; the extraordinary elevation of which is supposed to exceed by one-eighth the highest peaks of the Pyrenees; a fact which is confirmed by the severity of its winters, and by the great height of the bold defiles bending down to the northern desert.

In this mountainous country, filled probably with primitive rocks, the soil is generally barren; but in the upper provinces rich grain crops are gathered in from fields which to the sight exhibit scarcely any thing but pebbles. The lowlands of Cach Gandávah, formed by the alluvions of the Indus, are extremely fertile, producing grain, cotton, indigo, and oil. The valleys of Wudd, Khozdar, and Sohrab, are capable of cultivation. The precious metals, together with lead, iron, copper, tin, and antimony, abound in many parts of the country; as also rock-salt, nitre, and several medicinal minerals of great value.

The whole of this region, though mountainous, is remarkably destitute of water. It has not a single river that is navigable; but on the northern side the hills are a few brooks and mountain torrents; but these, with the exception of the Budar, are frequently dried up by the intense avidity of the lowland climate. The stream, known by different names in different parts of its course, as Budar, Mulidani, B'hagwar, Desti, &c., is supposed to have been formerly much larger and more important than at present; its source is in the district of Garmsail, near the banks of the Helmind, or Hindmind; but has never been traced by Europeans beyond the parallel of 29° from the ocean. At the distance of a hundred yards from the beach it is not more than twenty inches deep; more remote from the shore, however, its magnitude increases; and in the district of Penj-gúr it has a copious and perpetual stream.

The climate, and consequently the seasons, are very different in different parts of the country. In the loftiest regions they resemble those of the southern and middle parts of Europe, whilst, in the maritime provinces and deserts, they approximate to that of the tropics, and are subject only to three changes, introducing the hot, the cold, and the rainy periods. In J'hálawán and Saráwán the spring commences towards the end of February; the summer at the beginning of May; the autumn succeeds and continues through August and September, after which a severe winter concludes the year. The rains in the level sands of Macrán continue through February and March, and afterwards return in June and July, the latter being occasioned by a south-west monsoon. The hot season lasts from March till October, including the second rains, after which the cold succeeds and continues from November till February. The aridity and drought in Macrán are so extreme in the summer as to render the country scarcely habitable. Kohistan has a climate of medium temperature; and Cach Gandávah, where the heat is so intolerable in the summer, has scarcely any winter at all.

So great a variety of climate is capable of producing a great variety of vegetation; and after Nadir Shah, in 1739, granted the whole of this territory to Nasír Khan, that prince endeavoured to inspire his subjects with the love of agriculture, and gardening. With this view, he not only introduced various fruits from Cabul, but almost all the productions of temperate and tropical climes, numerous kinds of which are still to be found in some part or other of these dominions. All the different kinds of European grain, madder, cotton, indigo, esculent vegetables, &c. are produced in great abundance: wheat is sown in August and reaped the following June; barley is sown in September, and reaped in May. Madder, after lying in the ground three years, is brought to great perfection. Ushpusht, or camel-grass, a large species of clover (perhaps lucern), produces two crops in a month, and lasts for six or seven years. The provinces of Macrán and Les, or Las, yield a crop of grass in each of the rainy seasons. The palms throughout the whole reigon give a large quantity of dates, and, the impregnation of the female blossoms being carefully attended to, the varieties are almost innumerable. Rice is also plentiful, and forms a great part of the food of the inhabitants; besides which, they have bajrì (holcus spicatus); jowarí, (holcus rosghum); mung, (phaseolus mungo); mayz, dal, urad, and matar, (leguminous vegetables); channà, (cicer arietinum); and til, (sesamum). Among the timber trees of Baloochistan may be enumerated, the Bábal, (mimosa famesiana); laï, (tamarix); mulberry, nim, (melia azad lirachta); pipal, (ficus religiosa); sisù, (dalbergia sissoo); chinar, (oriental plane); mango, walnut, and sycamore. The common European forest trees are wanting. The apúrs, a species of the zizyphus, resembles the jujube, and tamarind. The wood of the former has much the appearance of teak, and both are remarkably hard and durable

The birds and animals are of numerous species, from the great diversity of climate. Most of our domestic fowls are common, with the exception of ducks, geese, and turkies. The magpye, a bird unknown in India, is not uncommon about Kelât. Flamingoes and floricans (otis houbára) are found in the lower districts. Poisonous reptiles are less frequent than in India. Freshwater fish are exceedingly scarce. The horses of Baloochistan are strong, but very vicious; their sheep are broad tailed, of the description of the Persian dunbah. Camels and dromedaries are the most common beasts of burthen, the latter of which, with only one hump on its back, is remarkable for its strength, swiftness, and power of abstinence. Wild and very fierce dogs are found in the woods: and the breed of those that are tame, especially the shepherd's dog and the greyhound, is an object of particular attention.

The inhabitants have been divided into four classes:—1. The Baloochees; 2. the Brahooees; 3. the Dehwárs; 4. the Hindoos. The two first of these, speaking different languages, are evidently distinct races, forming together the majority of the inhabitants. Mr. Pottinger thinks the upper and inhospitable regions of J'hálawán and Saráwán were first peopled by the Hindoos, who, in the early part of the eighth century, fled from the victorious armies of Mahmúd Sabuctagín and his son Masúúd. The two principal tribes abovenamed are divided into many different kheils, or tomuns, but their actual number has never been ascertained.

2. The Balooches, called Nharroe, or Rukshani, inhabit that part of the country lying west of the desert, and are a tribe containing 1000 fighting men; by whom the judgalls or cultivators have been nearly exterminated out of Northern Mekran. Mr. Pottinger thinks they are descendants of the Turcumán soldiers, who served in the armies of the Seljúk dynasties, and were dispersed when those dynasties were overturned; on which supposition, the first establishment of the Balooches in the mountainous regions east of Persia, must be referred to the fifth century of the Hegirah, answering to the eleventh of the Christian era, when they begin to be named by the Asiatic historians. But the Lord's prayer in their language, published by the baptist missionaries at Serámpór, affords us evidence of its having been derived from a Tartarian dialect; also, we may observe, that the Belúchíkí, or Belúch, commonly spoken, is evidently a corrupt dialect of the Persian, approaching to that of the Curds, on the western side of Persia, as the Brahúíkí, or Bráhú, does to the Hinduwe spoken in the Penj-áb.

Whatever be their origin they are found in the greatest numbers in the northern and eastern provinces, and are divided into three leading tribes,—the Nhárúis, Rinds, and Maghsis, of which the first and last are most important; the former on the western side of Baloochistan; the latter on the low lands of Cuch Gundâva, at the eastern foot of the mountains. These tribes are again subdivided, and those of Rind and Mugree, who formerly emigrated from Mekran, and live in villages, retain the appellation of Toomuns,

The Balooches are generally tall and handsome, but not athletic; patient, and full of courage. They delight in predatory excursions called chapaós, greatly resembling the forays of our northern borders in the sixteenth century. On these occasions they are mounted on dromedaries, provided with dates, bread, sour cheese, and water, and march without halting to the place they mean to attack; here they conceal themselves in a wood till night, and when the inhabitants are asleep, hasten forwards, burning, destroying, and carrying off whatever comes in their way. These diversions occasion frequent warfare; but hospitality is nevertheless general, and pilfering despised. Their domestic habits are pastoral, and their subjection to the chiefs voluntary. They reside in tents, or ghedáns of black felt, or coarse blanket, stretched over a frame of wicker-work, formed of twigs of the gaz, or tamarisk; an assemblage of which light habitations forms a túman or village, and its inhabitants a kheïl or family. The men are indolent, and great lovers of opium, though not accustomed to any other species of intoxication. They are less jealous of their wives than Mussulmans generally; of which, though their religion allows a plurality, they commonly have only one. Their regard to the sanctity of marriage is exemplary, and many of their customs appear to originate in the law of Moses. A widow must be married by her husband's next brother: adultery is punishable by the death of both parties; incontinence before marriage authorises divorce afterwards, the sang or promise of marriage is inviolable; and a betrothed virgin is considered as having nearly the same rights as a married woman.

Their clothing consists of a long shirt, and trowsers of blue and white calico, together with a quilted cap, round which, when they are in full dress, a shawl is twisted; in winter thick warm surtouts are worn by all classes. The women when young tress their hair, and twist it round their heads, forming the ends into a knot on the crown, so as to give it the appearance of a cap. Their dress in other respects resembles that of the men, but exposes the bosom as much as the tunic worn by the females of Persia. When out of doors they are completely veiled.

The soldiers, although awkwardly accoutred, are excellent marksmen; to kill a lark or sparrow with a single ball at the distance of fifty or sixty yards is not considered by them as any proof of dexterity; and the nézah-bázi, or spear play, their favorite diversion, evinces not only considerable skill, but superior muscular strength. It consists in the rider piercing a wooden stake, driven into the ground, with the point of his spear while his horse is at full speed; and requires the most critical management of both horse and spear at the same instant of time. On the whole, the similarity between the manners of this people and those of the Curds and wandering Turcumáns, the Yarúk of the Turks, found in every part of Anatolia, render the above conjecture as to their origin highly probable.

2. The Brahooees, or Bráhúis, are a strong hardy race of men, with uncommonly short and thick bones. Their cast of countenance is different from the Balooches and Asiatics, generally exhibiting a roundness of face, and bluntness of features, somewhat resembling Europeans. They are divided into separate tribes, the principal of which are the following:

	Men.
The Kumburanee, or the tribe of the chief Mahmood Khan, estimated at . . .	1,000
The tribe of Mengul	12,000
Zukree	6,000
Pandurani	6,000
Nahari	6,000
Imaum Hosseing	4,000
Begungje	1,000

They are hard-working people, of voracious appetites, devouring their animal food almost raw. When they cure their meat, it is effected by drying it in the sun, and smoking it over a fire; after which it will keep for several months, and in flavor very much resembles rein-deer's tongue. The people generally are less ferocious than their neighbours, for which reason the government of their chiefs asssumes a more despotic character. They are disinterested, placable, and humane; the very reverse of the Baloochees, and the uncouthness of their manners is to be attributed solely to their want of civilisation. All the Baloochees are excellent workmen, but none are equal to the Brahooees in strength and courage. Broad sword exercise, and shooting at a mark, are their common diversions; in both of which they are said to excel. Their breed of shepherds' dogs is excellent; greyhounds are also trained amongst them with great care, and a single one is frequently exchanged for two camels, or sold for 400 rupees. Their breed of horses is large and hardy, equally accustomed to the heat of Gundáva and the cold of Kelât, but they are often vicious.

The Brahooees, in religion, are strict observers of the Sunnah, or the traditional law of the Mussulmans, in which respect they approach nearer to the Turks than the Persians. They are not jealous of the women, who sometimes assist in out-door work, and are seldom secluded from the society of the men. The common dress used in this part of the province is an under coat, which fits close to the body and is worn over the pyrahun or shirt: their trowsers are gathered up at the ankle, and a small round flat-topped cap of felt silk is the only covering of the head. The shepherds wear a white felt garment above the shirt in winter, with cloth trowsers and a felt cap. The females wear a kind of stays which lace behind, and give them an appearance similar to that of the peasants in Switzerland. It has also been observed that with the exception of the shepherds, the Brahooees never increase their clothing in the severest weather. The common language is the Koórgalee.

3. The Dehwárs, or Dehkáns, i. e. villagers, are exclusively employed in agriculture, and hold their lands by a sort of feudal tenure, being bound to provide the khan's guests with water, fuel, provender, &c.; to attend him in his hunting excursions, and to supply him with couriers when required, in consideration of which they are exempted from all military duties; they are tacit, harmless, and submissive to the other tribes. They differ considerably from all the other inhabitants of the province, being uncomely in appearance, low in stature, coarse in features, with high cheek bones, but possessing a more artless, good humored and honest expression of countenance. They never migrate, and their language is pure Persian. Mr. Pottinger from this latter circumstance concluded that they sprang from the Gebrs, or followers of Zoroaster, who fled before the victorious arms of the Mussulmans, but, against this opinion, their dispersion through other parts of Asia, their correspondence with the tájies of Afghánistán, together with their zealous observance of the Sunnah, powerfully militate.

4. The Hindoos are few in number and carry on the miserable traffic of the country, acting as money-changers and agents to the native chiefs. Many of them are not so indigenous as they have been generally represented, but are merchants from Multán. The Hindoos are supposed to have been the first settlers in these mountains, and were long tolerated by their Mussulman conquerors, who, according to current traditions, were first admitted into their impregnable retreats as traders, where being indulged with too much lenience, they finally subverted the government. Numerous Hindoo occupiers, however, still remained in the country, till within the last two centuries, when the barbarity of the Mahommedan tribes increased to such a degree that no medium could be observed, and the native Hindoos, with the exception of a few merchants, underwent compulsory conversion, or fled the country. The remaining few have however considerably degenerated from the laws of the Sháster; they eat animal food, use leathern bags, and in many other respects violate their religious tenets, and perhaps it is this partial conformity which constitutes the true principle of their toleration.

Of the divisions of Baloochistan generally — Jháláwán and Sáráwán, with the intermedia district, extending to the north and north-east, and bounded by that part of the Brahúïc mountains which is beyond the twenty-sixth degree of north latitude, come first under our consideration. Jháláwán is the most southerly, containing six t'hacs or districts, each governed by a different chief. Zehri, the largest town, is surrounded by a mud wall, and contains 2000 houses. There are no streams in the whole province more than ten inches deep in the dry season, and water can be obtained only by digging in the beds of torrents. Kelât properly belongs to Sáráwán, but the usurpations of the khán have rendered it nearly a distinct province. To the north of it, bounded by the Afghán hills and the desert east of Kandahár, lies Sáráwán, divided into inferior districts, and occupied by migratory tribes of the Bráhúïcs. The province is mountainous, not possessing a single level of more than a few miles in circumference, except a naked plain of about thirty miles in extent, called the Deshti-bé-daulat, or Pennyless Desert, forming a remarkable gap in the northern front of the great chain. The southern province is fertile, having frequent rains, but the least populous; Kelât is considered the capital of Baloochistan generally.

Nooshky is a small tract of about thirty-six square miles, lying at the base of the Kelat mountains. It is an arid tract, the sand hills of which shift with the winds. A few patches of cultivable land are nevertheless met with occasionally; and a small stream, called the Xysur, issuing from the hills, irrigates the portion of country immediately contiguous. The inhabitants dwell under black felts stretched over a frame of wickerwork made of the guz plant, by which they are sheltered from the heat of the sun. The soil being sandy, the heat is excessive in the summer; the stream fails in the valley, and the inhabitants migrate to the mountains for cool air and water.

The fine valley of Sohrab extends north and south about fifty miles in length by twelve in breadth. The water from the hills runs through its centre, and around it are scattered a few villages.

The two provinces of Les and Macrán are included between the higher ridges of the Brahúïc chain and the Indian Ocean, and are varied by intersections of such branches of these hills as diverge towards the sea. On the north lie the regions of J'hálàwán, Sáráwán, and Kelât, together with Kehistan and the desert; and on the west the Persian Láristán. Lus or Les, signifying in the Jedgáli language a valley or plain, presents a perfectly level surface for about ninety miles by fifty, enclosed on three sides by lofty mountains passable by only five lekhs, or defiles, two in the eastern and western, and one in the northern branch of this great chain. This is a fertile province, watered by two small rivers, Habb and Puráli (the Arabis of the ancients), and together with Macrán formed a part of the Persian empire. The sovereignty is at present held on a feudal tenure under the khan of Kelât.

Bélá, the capital, stands on a rocky eminence on the northern bank of the Purálí. Many of the inhabitants are merchants from Multán and Shicárpúr, west of tne Indus, and their immunities are considerable.

The population of Lus is about 26,000, who are of the same tribe, though distinguished by the different names of Jedgál, Jók'hyà, Jét'h, and Numrì. They are an indolent and curious people; the men athletic and middle-sized, the women plain, and dirty. Their manners, appearance, and language, prove that they must have been derived originally from Hindostan; and the latter called Jedgali or Jét'hgálí has a close affinity with that of Sind'h. They are fond of intoxicating drugs, and nearly one third part of them are migratory.

Of Makran there are fourteen districts, several of which are uninhabited. Water is extremely scarce throughout the whole territory, a great part of which consists of barren mountains with here and there a fertile valley, or an island of palms emerging from the waste, similar to those found in the vast deserts of Africa. Many of the streams of this region, now trifling brooks, were formerly navigable. In one of these, namely, Ag'hón Nadì, is a celebrated well called Anílcà Cund, or Fathomless Abyss, the depth of which is not known. The Hindoos attribute the digging of it to Cálí, whose shrine at Hinglatz or Hing-láj, just above it, is the resort of numerous pilgrims. The river Dest waters the district of Kedge, or Kej, which receives its name from the capital of the province. This ancient town carried on formerly a considerable trade with Kandahár and the north of India, but has gone to decay since its governors threw off their allegiance to the khán of Kelât. It has many advantages of site, and covers three sides of the base of a hill, on the summit of which is a castle deemed impregnable.

Kohistan is surrounded on the east, north, and west, by sandy deserts, with the exception of a narrow range of hills which connect it on the north-west with the Paropamisus of the ancients, and on the south it is bounded by the Bráhúïc chain, of which it forms one of the extremities. It is divided into two districts, the Maídání or plain, and the Chópakí or hilly country. Water is extremely scarce and the population scanty, consisting chiefly of Belúches. It abounds with salt and chalybeate springs, with numerous mineral productions, and its hills occasionally betray a volcanic origin.

The desert, 300 miles long and 200 broad, is traversed by the Helmind or Hermend, the natural boundary of Baloochistan, and separated on the west by a narrow range of hills from the deserts of Kirmán. Its utmost extent including the latter is about 600 miles diagonally from east to west, and 500 miles from north to south, and is bounded on the north and east by the mountains of Afghánistán.

This vast ocean of sand is composed of particles so light that when taken up into the hand they are little more than palpable, and when agitated by the winds are thrown into an irregular mass of waves running east and west. Most of these banks rise perpendicularly from ten to twenty feet on the leeward side; and, from the redness of their appearance, might be taken for brick walls, whilst the windward side slopes off with a gradual declivity to the base of the next bank or wave. The camels are with difficulty driven up the perpendicular or leeward sides of these sandy hills; but on the shelving sides they ascend with laborious perseverance, and, having reached the summit of a wave, drop most expertly on their knees and slide down with the sand to the bottom of the next hollow. These mountains of sand are observed to be succeeded by hard black gravel, without the least appearance of vegetation, and bare stony hills lying at the base of the mountains, are the first ascent towards higher and less barren regions. Throughout the whole desert the sands are extremely hot, and the fine particles, raised by the wind, getting into the eyes, nostrils, and mouth of the traveller, cause an extreme degree of painful irritation and thirst.

The Regency of Sind'h and also Cach Gandávah, east of the Brahúïc chain of mountains, between India and Persia, though commonly included in the kingdom of Baloochistan, belong more properly to Hindostan.

With respect to the history of Baloochistan antiquity is almost silent. The mountainous tract, which forms the central and most important part of this territory, appears to have been unknown to the ancients, and was perhaps uninhabited up to the period of the Mahommedan conquests in the seventh and eighth centuries of the christian era. Alexander marched from Pattálá, (T'hatt'hah or Tattah) on the Indus, through the territory of the Arabitæ, still indicated by the cape called Arabù by the natives, the Arabah of the maps, thence he advanced into the country of the Oreïtæ in his way to Gedrosia or Macrán, where the greater part of his troops are said to have perished from thirst, famine and fatigue. Craterus who commanded, with another part of his army, passed by a circuitous route through Arachosia and Drangiana, the Kandahár and Seistán of modern geography; countries placed in a higher latitude, south of the extreme deserts which separate the Belúches from Persia and Afghánistán. The Mahommedan invaders followed the track of Alexander, whilst the Sultans of Ghaznah, who made themselves masters of the level country to the mouth of the Indus, and the coast as far as the confines of Persia, never descended the hills. The Persian historians say the idolatrous Hindoos were driven into these retreats; but, since the present occupiers betray no affinity with the natives of India in customs, features, or language, the origin already assigned is more probable. They themselves affirm that they are the original natives of the hills, and that their name Bráhúé is derived from Baróhí mountains, whilst the inhabitants of the plain are called N'háríis or Naróhís, Lowlanders. The most ancient traditions do not carry the origin of the Mussulman government further back than seven generations.

About two centuries ago the city of Kelât with the surrounding country was possessed by Sewah Rajah a Hindoo, and the Balooches tended flocks of sheep in the mountains. To protect the inhabitants from the depredations of a people residing in the low country between Kelât, Sinde, and Shekárpoor, the rajah sent for Kumber a Baloochy chief, and took him into his service, allowing him five bundles of grass and wood per day for each man. This auxiliary shortly after seized the government, and raised the tribute to a hundred bundles, besides a contribution of horses, camels, and footrunners. This tribute is still occasionally exacted by the Khan of Kelât, and paid by the detmars or peasants in the immediate vicinity.

Kumber the first usurper was succeeded by his son Sumbar, the father of the next prince, Mahommed Khan, who in his turn was succeeded by his son Abdulla Khan.. This prince conquered a considerable part of Cach Gandávah, till then subject to the Nuwwábs of Sind'h. About that time the celebrated Nádir Sháh carried his victorious arms into India; and while at Kandahár sent an army into the mountains of the Belúches. Abdu'llah sent his two sons as hostages to the conqueror's camp; after which he was allowed to continue in his government as a feudatory of Persia. Upon the death of Abdu'llah, Nasir Khan his younger son, by the advice of Nádir Sháh, put to death his elder brother, who had succeeded to the sovereignty, and took possession of the Gad'hi or throne; and having performed some important services to his patron, was rewarded by the donation of several provinces, and, being a man of considerable abilities, greatly enlarged his dominions, so that at his death, in 1795, the territories descended to his son and successor Mahmood Khan in a very flourishing and prosperous state. This prince is now about twenty-nine years of age; but his talents being very inferior to those of his father, the dominions of Kelât have been greatly curtailed by the Ameers of Sinde and other neighbouring provinces. His brother Mustapha Khan, who is about one year younger than the sovereign, is, however, of an active martial disposition, and bids fair on his accession to restore the empire and improve the hereditary dominions. The territory at present subject to Mahmood Khan, comprises the high hilly country of Sewistan, and the low lands of Cutch Gundava and Amund, Dajil to the eastward; bounded on the north by Khorassan; on the south by Lus and Sinde; on the west by Mekran; and on the east by Sinde. His clear revenue is about three lacks of rupees, and is collected from Amund Dajil, Cutch Gundava, and the bazaar tolls of Kelât. The Khans of Baloochistan acknowledge the paramount authority of the Cabul sovereigns, to whom they are feudatories; but their obedience is in proportion to the talents of the reigning prince, and the political circumstances of the Cabul government. The present territories of Mahmood Khan are supposed capable of raising an army, infantry and cavalry, of 25,000 men, although formerly the sovereign could raise 60,000. See *Christie*, *Kinneir*, *&c.*

It was probably without intention that Nasir Khán laid the foundation of the present government, which is rather a military republic than an absolute monarchy. The Serdárs or chiefs hold their lands on feudal tenure, each tribe chooses its own Serdár, in whose family the office becomes hereditary. The general administration is, however, still vested in the Khán of Kelât. Each

Serdár in time of war attends with his quota of troops, and is bound to obey the orders of the sovereign; but if to his own detriment, receives compensation.

A new code of laws was established by Nasir, of which the Koran is the standard, accompanied however by the following improvements. In cases of murder where the deceased is a foreigner, every one concerned in the crime is immediately executed without commutation. Burglaries and night robberies are punished with death. Adultery may be avenged by the husband; but the clearest testimonials of guilt are required; and if he fails of producing these he is liable to severe punishment. Minor offences are cognizable by the Serdár of the Kheïl, or family, with an appeal lying to the Serdár of the whole tribe, and ultimately to the Khán himself, who commonly consults the heads of his family before he decides on any intricate cause. No execution can take place without an order from the sovereign, except in case of the murder of a traveller on his road, when, as a speedy execution is necessary, the nearest chief is empowered to enforce the penalty of the law.

BALOR, a town on the east coast of the island of Luzon. Long. 122° 5′ E., lat. 15° 18′ N.

BAL′OTADE, *n. s.* The leap of an horse, so that when his fore-feet are in the air, he shows nothing but the shoes of his hinder feet, without yerking out. A *balotade* differs from a capriole; for when a horse works at caprioles, he yerks out his hinder legs with all his force.—*Farrier's Dictionary.*

BALOTE, a town on the east coast of the island of Mindoro. Long. 121° 15′ E., lat. 13° 3′ N.

BALOU, a town of Armenia, twenty-five miles north-west of Khars.

BALREMIT Bay, a bay on the east coast of the island of Colonsay, one of the Hebrides. Long. 6° 7′ W., lat. 56° 6′ N.

BALRIE Castle, a very ancient fort, now in ruins, situated on an eminence at the west end of the moss of that name, Angusshire, Scotland. It was destroyed by the marquis of Argyll in 1640. The walls are eight feet thick. This castle and the adjacent lands were the property of the last viscount Fenton.

BALROTHERY, or **Balruddery**, a town of Ireland, in the county of Dublin, fourteen miles from the city and one from the sea.

BALSA, an ancient town of Lusitania in the Ager-Cunæus; now called Tavira, in Algarva.

Balsam, or **Native Balsam**, an oily, resinous, liquid substance, flowing either spontaneously, or by means of incision, from certain plants. There are a great variety of balsams, particularly distinguished by the names of the substances from which they are obtained; and which will be found explained under their names as they occur.

BAL′SAM,
Balsam′ation,
Balsam′ical,
Balsam′ick, n. & *adj.*
Balsam′ous.

Of the same derivation as *balm*, but more limited in its application. It is almost exclusively used to designate an unctuous or oily mixture, generally attended with fragrance.

> Should I sigh out my days in grief,
> And, as my beads, count miseries;
> My mind would meet with no relief,
> For all the *balsam* of my eyes. *Stevenson.*

> Brave spirits are a *balsam* to themselves,
> There is a nobleness of mind that heals
> Wounds beyond salves. *Cartwright.*

> Is this the *balsam* that the usuring senate
> Pours into captains' wounds? Ha! banishment?
> It comes not ill; I hate not to be banish'd;
> It is a cause worthy my spleen and fury,
> That I may strike at Athens. *Shakspeare.*

> Christ's blood our *balsam*; if that cure us here,
> Him, when our judge, we shall not find severe.
> *Denham.*

> That this herb [ros-solis] is the cause thereof, shepherds affirm and deny; whether it hath a cordial virtue by sudden refection, sensible experiment doth hardly confirm; but that it may have a *balsamical* and resumptive virtue, whereby it becomes a good medicine in catarrhes and consumptive dispositions, practice and reason conclude. *Brown's Vulgar Errours.*

> The Britons squeeze the works
> Of sedulous bees, and mixing odorous herbs,
> Prepare *balsamic* cups, to wheezing lungs
> Medicinal, and short-breath'd ancient sires.
> *J. Philips.*

> Now the radical moisture is not the tallow or fat of animals, but an oily and *balsamous* substance; for the fat or tallow, as also the phlegm or watery parts, are cold; whereas the oily and *balsamous* parts are of a lively heat and spirit. *Sterne.*

Balsam Apple. Lat. *momordica.* An annual Indian plant.

Balsam Tree. This is a shrub which scarce grows taller than the pomegranate-tree; the blossoms are like small stars, very fragrant; whence spring out little pointed pods, enclosing a fruit like an almond, called carpobalsamum, as the wood is called xylobalsamum, and the juice opobalsamum.

BALSAMATION is used by some writers for the art or act of embalming dead bodies. Dr. Hook speaks of an universal balsamation, or method of preserving all kinds of bodies from corruption, invented by Dr. Elshot.

BALSAMELÆON, in the materia medica, a name given by some to the balm of Gilead.

BALSAMELÆUM, in ecclesiastical writers, the sacred chrysm.

BALSAMINA Scandens, a name given to the large fruited white briony of Ceylon.

BALSAMINE, Female, in botany, the name given by Tournefort to a genus of plants, called by Linnæus, impatiens, and belonging to the class of syngenesia monogamia.

BALSAMITA, a species of tansy.

BALSAMICA. See **Balsamics.**

BALSAMICS, **Balsamica**, Latin, i. e. mitigating; this term includes medicines of very different qualities, as emollients, detergents, restoratives, &c.; but in all these kinds there are these requisites, that they be soft, yielding, and adhesive; and by their smallness they have a ready disposition to motion. Medicines of this tribe are generally required for complaints whose seat is in the viscera; and as they cannot be conveyed there but by the common road of the circulation, it follows that no great effects can be expected from them but by their long continuation

Hoffman calls by the name of balsamics those medicines which are hot and acrid, also the natural balsams, gums, &c. by which the vital heat is increased.

BALSAMITA, in botany, a genus of plants, of the class syngenesia, and order polygamia æqualis. Its generic character, is receptacle naked, pappus none, calyx imbricate. It contains four species, of which the only one requiring notice is the B. vulgaris (tanacetum balsamita of Linnæus) common costmary, or alecost. Its stem is herbaceous, leaves oval, dentate; inferior petiolate; superior sessile, auriculate at the base, flowers corymbose. It is a perennial plant, native of the south of France and Italy; and was formerly prescribed in the pharmacopœias as a carminative.

BALSAS, a town of Peru, in the province of Chachapuyas, on the east shore of the Amazons, forty miles north of Caxamarca. Lat. 6° 16′ S.

BALSEY Clift, a high land on the east coast of England, between Orford and Harwich.

BALSO, a river of Quito, which, after winding through forests, enters the Bobonasa.

BALSTAL, a well-built market town of Switzerland, in the canton of Solothurn. The inhabitants carry on a great trade between Bale and Solothurn. Ten miles north-east of Solothurn.

BALSAMON (Theodore), patriarch of Antioch in the twelfth century. He wrote a number of works on the canon law, which were printed at Paris, in folio, in 1620.

BALSHAM, or Belesale (Hugh de), the tenth bishop of Ely, in the thirteenth century, was first a monk, and afterwards subprior of the Benedictine monastery at Ely. In 1247 he was chosen bishop by the convent. But king Henry III. who had recommended his chancellor Henry de Wengham, refused to confirm his election; whereupon Balsham went to Rome to be confirmed by the pope; which, however, was not done for ten years, when at last his holiness confirmed his election in 1257. Bishop Balsham then executed what he had long intended; by laying the foundation of St. Peter's College, Cambridge, the first in that University, which has immortalised his name as the patron of literature. He was also very charitable to the poor. He died in 1286, and was buried in the cathedral of Ely.

BALTA, or Balto, a town of European Russia, the capital of a circle in the government of Podolia, situated on the Kadyma, a tributary stream of the Bog. Before the annexation of this part of Poland to Russia, one half of Balta belonged to the palatinate of Braclaw, and the other to Tartary. In 1767, in the war which broke out between the Russians and Turks, the town of Balta was laid in ashes by the former. Sixty-five miles N. N. E. of Bender.

Balta, one of the smaller Shetland islands, near the east coast of Unst. Long. 4° 2′ W., lat. 61° 7′ N.

BALTAGI, among the Turks, porters, and hewers of wood, in the court of the grand seignior; who also mount on horseback when the emperor rides out. Part of them, who, for that purpose, must be castrated, keep watch at the gates of the first and second courts of the seraglio. These last are called capigi, and their commander capigi pacha.

BALTCHUTZKO, a town of Asiatic Russia, in the government of Kolhyvan.

BALTEATUS, in entomology, a species of cimex, inhabiting South America. 2. A species of elater, of a black color; anterior half of the wing cases rufous. Linn. Fn. Suec. A native of Europe.

BALTEUS, in entomology, a species of cerambyx, that inhabits Lusitania. The thorax spinous; body ferruginous; abdomen ovate; wing cases with a blackish band. Linnæus.

BALTHASAR (Christopher) a learned French author of the seventeenth century. He followed the profession of an advocate; but having embraced the protestant religion, from pleading at the bar, he became a champion for the reformed churches; and in 1659 a pension was settled upon him by the national synod at Loudun, in consideration of his services. He displayed great abilities in combating Baronius.

BALTHAZARINI, an Italian musician of the sixteenth century, who was a great favorite at the French court in the reign of Henry III. He composed a ballet, which he called Ceres and her Nymphs, in 1531, designed for the marriage of the duke de Joyeuse with Mademoiselle de Vaudemont, the queen's sister; and this is thought to have been the origin of the ballet heroique, in France.

BALTHEUS Orionis, the belt of Orion, in astronomy, a part of the constellation of Orion, consisting of three bright stars of the second magnitude, placed nearly in a right line in Orion's girdle.

BALTHICA, in conchology, a species of tellina that inhabits the Baltic Sea; the shell roundish, smooth outside, carnation color. Linn. Fn. Suec. About the size of a horse-bean, and very rarely larger; extremely thin, pellucid, brittle, and white within. Chemnitz, &c.

Balthica, a species of helix, found on the shores of the Baltic; the shell imperforated, ovate, and pointed; with elevated wrinkles; aperture ovate, and very ample. Linn. Fn. Suec. This animal is black, with two tentacula; shell pellucid, and with four whorls.

BALTHICUS, a species of nautilus, of the smaller kind, that is found adhering to the roots of fuci. This shell is sometimes opaque, sometimes glossy, frequently pellucid; and the wreaths either smooth, striated, ribbed, or tuberculated. It is specifically distinguished by being white, convex, aperture linear, and the first wreath much larger than the others. Schroeb.

BALTIA, an island in the Baltic Sea which gives name to it.

BALTIC Sea. A large gulf of the German Ocean, penetrating the upper part of Europe, and surrounded by the coasts of Denmark, Sweden, Russia, Germany, and Prussia. It is 600 miles in length; from eighty to 150 miles in breadth, commencing at the Danish islands of Funen and Zealand; it stretches beyond the sixty-fifth degree of latitude, including an area of surface equal to 10,000 square leagues. The two extreme divisions of this sea are the Gulfs of Bothnia and Finland; the former running

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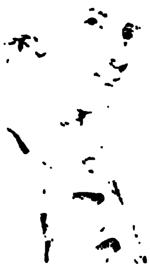

inity of Petersburg, the latter ex-
till it penetrates the arctic regions.
through a narrow winding chan-
on the west of the European con-
rthern part of which, communi-
ocean on the south-west, is called
k; the middle consists of the
ttle Belts, and the southern part
t. This entrance to the Baltic is
led the sound. It is also connected
d Memel by narrow passages with
es called the Frische Haff and

ity of the coasts and islands, the
f the waters, the flatness of the
, the ruggedness of that of Sweden,
nd sudden changes of the winds,
t storms with which they are at-
r this sea very dangerous for navi-
gh the breakers are much less for-
those in the German Ocean. The
of the Baltic is from fifteen to
s, although in some places it is
l in others much more. Like other
e Baltic has no tides, or, if it has,
ely perceptible; but a strong cur-
sets towards the ocean, which,
by a west wind forcing the waters
direction through the straits, causes
ise much above its ordinary level.
f this sea are colder and less salt
the Northern Ocean; from which
together with the deficiency of
ally for about three months of the
letely frozen as to admit in many
ssage over the ice. The ice in the
begins to break up in April, al-
o gulfs are not generally cleared
ddle of May.
rivers, of different degrees of im-
ty themselves into this sea, which
ute to the freshness of its waters,
with the diminished evaporation of
regions, occasion the current to
e already referred. The chief of
Warnow, the Oder, the Peene, the
Wipper, the Vistula, the Pregel,
r the Niemen, the Dwina, the
he Cano, the Torneo, the Skel-
ea, the Lulea, the Umea, the An-
Motala, the Luisna, and the Dal.
articles conveyed into the bed of
means of streams, rivers, &c. are
the depth of this sea to diminish at
r feet in a century; and Mr. Von
Travels in Sweden and Lapland,
respect to the Bothnian Gulf, that
ave become marshes by the conti-
of the gulf waters; and that we
ect to see the site of that aquatic
d with fields and cottages.
of the Baltic are numerous, one
h, reaching from Finland to Swe-
the southern part of the sea from
commonly called the Gulf of Both-
ief of the Danish islands forming
seat of the government are Zea-
en. Near the shores of Livonia
s Dago and Oesel. Gothland and Oeland belong to Sweden; Rugen to Pomerania; and Moen, Bornholm, Falster, Alsen, Laaland, together with several others, are subject to the Danes.

Considerable fisheries are formed on some of the coasts of the Baltic, and Mr. Fischer, a naturalist of Livonia, enumerates nearly fifty different species of fish in the waters of that province; the principal of which known as articles of commerce are salmon, pike, streamlings, and lampreys.

The general commerce of the Baltic is very considerable, since it washes the shores of Denmark, Sweden, Russia, Prussia, and part of Germany; it has a communication with the Caspian Sea, by means of the canals of Ladoga, Vyschnei-Volotschok, and Maria, thus opening facilities for conveying the commodities of northern Europe into the interior of Asia.

All vessels that pass in or out of the Baltic pay a certain duty to the Danish government, for the maintaining of light-houses, &c. This toll is received at Elsinore, where the vessels are regularly entered in the national register, a view of which for the years 1816 and 1817, will enable the reader to form some idea of the comparative importance of the Baltic commerce. A second entrance into the Baltic, by the canal of Gotha, was opened in 1832.

In 1816 *were registered the following vessels:—*

	From the North Sea.	From the Baltic.
America .	83	85
Bremen . .	55	56
Danish . .	408	379
Dutch . .	473	403
English . .	912	906
French . .	8	8
Hamburgh .	18	18
Hanover . .	113	111
Lubeck . .	23	22
Mecklenburg	126	127
Norwegian .	396	398
Oldenburg .	16	13
Pappenburg	22	17
Portuguese .	25	23
Prussian . .	525	489
Rostock . .	65	68
Russian . .	208	191
Spanish . .	5	4
Swedish . .	1097	945
	4608	4263 4608
Total number that passed the Sound in 1816 . .		8871
Number to and from in 1831 12,938	4778 British	
Ditto 1832 12,202	3831 do.	

In 1817 were registered the following vessels:—

	From the North Sea.
America	68
Bremen	11
Danish	463
Dutch	695
English	2088
French	22
Hamburgh	42
Hanover	212
Mecklenburgh	169
Norwegian	470
Prussian	917
Russian	197
Swedish	1044
Other nations	360
Total number of vessels from the North Sea . .	6758
From the Baltic the same year	6390
Total number of ships that passed the Sound in 1817	13,148
Total in 1831, 12,938	4778 British.
Do. in 1832, 12,202	3831 do.

The winds are extremely variable in the Baltic; but they blow most commonly from the east in the spring, and from the west in autumn; calms are seldom experienced except in the middle of the summer. The irregular variations of the level of the Baltic somewhat resemble tides, and occur generally in autumn, when the weather threatens rain. These sensible swells frequently last for weeks together, and their maximum rise being three feet and a-half, all the low lands are inundated. On these occasions, the fresh-water lakes which communicate with the sea are rendered brackish. In the Gulf of Bothnia, the fall of the water is usually succeeded by north winds, whereas, at Stockholm, these winds follow the elevation. M. Kraft, who was professor of experimental philosophy in the imperial academy at Petersburgh, published a treatise on the inundations of the Neva at the autumnal equinox, in which he observes, that three or four days before or after the full or new moon, a violent north-west wind drives the waters of the Northern Ocean, during the influx of the tide, into the Baltic, and is immediately succeeded by a south wind in that sea and the Gulf of Finland, to the concurrent effect of which he attributes the phenomena in question; but Schultens, a learned Swede, who had closely studied the physical geography of the Baltic, attributed all the irregular elevations of this sea to the unequal pressure of the atmosphere on different portions of the water, deranging, in his opinion, their common level. He was led to this conclusion by having observed repeatedly, that when the waters were about to rise, the barometer fell, and that when the waters were about to fall the barometer rose.

The waters of the Baltic are of different degrees of saltness in different places, and in the same places at different seasons, and during different winds. The waves are short and broken,
in consequence of sudden changes of
regular depths, and strong currents,
which, especially towards the north, ri
in the course of a year. The superior
rior currents of the Sound are rem
These were discovered first by some of
countrymen, who, being in a boat in th
of the channel, found that they drifted
the Cattegat; but upon letting down
bucket to the depth of four or five
found that their boat became station
upon sinking the bucket still deeper,
drifted in a direction diametrically op
the superficial current.

By the transfer of Swedish Pom
Prussia, of Swedish Finland to Russi
Norway to Sweden, the commerce and
of the Baltic nations have undergone a
able change.

The following is a sketch of the stapl
of their commerce at the beginning of
sent century.

Danish vessels visit the ports of Meck
and Pomerania, with horses, bullock
cheese, fish, fish-oil, colonial produce,
receive in return, thread, linen, bran
hardware, paper, &c. To Petersburg
and Memel, the Danes send herrings
fish, woollen manufactures, salt of Franc
and Portugal, India and China goods
and dog-skin gloves; for which the
potash, planks, fire-wood, flax and he
dage, iron, copper, linens, and corn.
land, Denmark exports rape-seed, sa
dried fish, and timber; and receive
drugs, corn, pipes, and paper. To
hides, bar-iron, kelp, furs, tar, tim
The returns are, hardware goods, wool
tons, hats, and colonial produce.
official account of the real value of th
into Denmark from Great Britain, fro
January 1798, to the 5th January 1
before Parliament, in consequence of
on Copenhagen, it appears, that from
1803, they are rated about half a mil
that from 1803 to 1808, they varied fr
six millions. France receives from
horses, butter, cheese, fish, &c.; and re
wines, brandy, fruits, silks, &c. The
Spain and Portugal are nearly the s
France; the imports also are the same
addition of wool and American pro
the Mediterranean, Denmark sends
provisions, butter, iron, &c.; and recei
brandy, oils, fruit, and salt. The Da
great profit from hiring their vessels t
of Italy, as their flag is generally res
the Barbary States. The exports to
Islands are wheat, flour, brandy,
sugar, linens, &c.; the imports are
salted fish, fish-oil, feathers, hides,
worsted stockings. The exports to, a
from, Iceland, are nearly the same;
from Greenland are whale-oil and bo
and skins, eider down; the exports
same as to the Faroe and Iceland Isla
mark has also a trifling trade to the
West Indies.

In 1807 the Danish fleet consisted

of the line; sixteen frigates; nine sloops,
ty gun-vessels.
oreign commerce of Sweden is confined
t are called staple towns, which alone
stom-houses; they are Stockholm, Got-
h, Warberg, Halmstad, Nordkœping,
ona, Carlscrona, Christianstad, Carl-
Calmar, Westervic, Uddervalla, Mar-
Gefle; and Abo and Wasa in Finland,
en up to Russia. The foreign commerce
osed to be divided among these cities,
vs:
holm $\frac{7}{12}$ths of exports, and $\frac{1}{2}$ of imports.
burgh $\frac{3}{12}$ths $\frac{1}{4}$
ther ports $\frac{2}{12}$ths $\frac{1}{4}$
e foreign parts of the Baltic, Sweden ex-
on, steel, copper, lime, alum, and her-
nd receives corn, hemp, tallow, and
To Holland, iron; and receives spices,
prepared colors and papers. To Eng-
e exports iron, timber, pitch, tar, potash,
nings; her imports are lead, tin, leather,
tter and cheese; and every kind of ma-
e and colonial produce. In France,
nd Portugal, the exports are iron, steel,
nd brass, and wines, brandy, fruits; oil
ks are the returns. To Italy and the
she exports all her territorial produc-
nd receives salts, spices, fruits, and cot-
here are from four to six ships of 600 to
ns burden in the East India trade. In
e had above 2000 merchant vessels of
ons and upwards; but the rupture with
l and cession of Finland reduced them,
, to 1500. In 1809 her navy was re-
n consequence of her wars with Russia,
en sail of the line, nine or ten frigates,
ut 150 vessels of the flotilla.
Prussian ports, including Dantzic, export
the whole of the commercial productions
nd, consisting of corn, fir planks and
masts, hemp, tar, pitch, potash, hides
low, leather, honey and wax; besides
nian oak, brandy, woollens, linens, ca-
d amber. The imports are wines, coffee,
bacco, spices, salt, iron, copper, Spanish
rrings, and flax seed from Livonia and
d. Towards the close of the last cen-
merchant marine of the Prussian ports
Baltic, consisted of between 900 and
ips. Salted and smoked meat, hides,
utter, cheese, corn, and fruits, are the
of that part of Pomerania which belonged
en and Mecklenburgh; the corn of the
principally taken off by England; that
rania, as well as the fruits, used to go to

xports and imports of Russia, in the
n the beginning of this century, were

		Exports. Rubles.	Imports. Rubles.
02	-	47,000,000	33,000,000
04	-	45,000,000	27,000,000
05	-	52,000,000	29,000,000

umber of her merchant-vessels that na-
e Baltic and the Ocean, do not exceed
rhaps 100 smaller vessels carry on the
-trade here; and about 100 craft of twenty or thirty tons are employed in loading and discharging these vessels at Cronstadt, that cannot enter the Neva. At the close of 1807, the Russian Baltic fleet consisted of twenty sail of the line, fourteen frigates, six brigs and cutters, and nineteen small craft; and the Baltic flotilla, of twenty galleys, twenty-five floating batteries, eighty-one gun-boats, and sixteen yauls.

Baltic Port (formerly Rogerwick, from the island of Roog, on which it is built), a sea-port of European Russia, in Esthonia, now the government of Revel, at the influx of the rivulet of Padis into the Baltic. The fortifications were begun by Peter I. but discontinued by Catherine II. Were they completed, few harbours would equal it in size, depth, or security. Thirty-eight miles west of Revel, 150 north of Riga, and 220 west by south of St. Petersburgh.

BALTIMORA, in botany, a genus of the polygamia necessaria order, and syngenesia class of plants. The receptaculum is chaffy; there is no pappus; the calyx is cylindrical and polyphyllous; and the ray of the corolla is quinqueflorous. There is but one species, viz. B. recta, a native of Maryland. It is allied to Milleria.

BALTIMORE, a large, populous, and well cultivated county of the western shore of Maryland, is bounded on the east by Harford county and the Chesapeak, north by York county, Pennsylvania, south by Anne-Arundel county, southwest by a small point of Montgomery, and west by Frederick. It is thirty-six miles from north to south, and forty-five from east to west, and contained in 1820, 24,580 white, and 33,463 total population, exclusive of the city of Baltimore. In this county are found vast quantities of iron ore of the best quality, and it is watered by numerous rivers.

Baltimore, the largest city in Maryland, the third in population, and the fourth in commercial importance in the United States, is built upon a bay, which opens from the north side of Patapsco river, and affords a spacious and convenient harbour. The strait which connects this bay with the river is scarcely a pistol-shot across, and is well defended by fort M'Henry. A small river, called Jones's Falls, empties into the north side of the harbour, and divides the city into two parts, called the Town and Fell's Point, connected by bridges. At Fell's Point the water is deep enough for vessels of 500 or 600 tons, but none larger than 200 tons can go up to the city. Baltimore is well situated for commerce. It supplies Maryland, and large portions of Pennsylvania and the western states with foreign goods, and is supposed to contain nearly 70,000 inhabitants. Its rapid growth may be thus exhibited:

In 1765 the population was	300
1790	13,503
1810	46,555
1820	62,627
1830	80,625

In 1790 the tons of shipping trading here were 13,564. In 1830 106,303, in 633 foreign and 501 coasting vessels. Baltimore cannot be considered on the whole a very healthy place, although the atmosphere is said to have become less humid of late: in autumn, the most unfavourable season, the opulent portion of the inhabitants generally retire to their country seats in the neighbourhood. It is in general well built, most of the houses being of brick, and many lately erected displaying considerable taste. Its general plan is similar to that of Philadelphia, the streets crossing each other at right angles. Some of these are spacious, one in particular is about a mile long, and eighty feet wide, running east and west, nearly parallel to the water. The ground on the north and east of the city rises to a considerable elevation, and with the number of ships in the harbour forms a scene very interesting. The principal public buildings are a court-house, penitentiary, jail, almshouse, hospital, theatre, exchange, museum, a gallery of paintings, and a public library, possessing about 10,000 volumes. Besides these there are ten banks, and thirty-one places for public worship, belonging to nearly all the denominations of religious professors to be found in the United States. The exchange is a vast pile of building, very lately erected, 255 feet in length by 140 in breadth, comprising four wings. The Roman Catholic cathedral, the Unitarian church, St. Paul's church, the Court-house, and the Union bank, are all spacious and elegant structures. The Washington monument is another ornament to this city. It stands in an elevated situation, at a short distance above the compact part of the town. The base is fifty feet square, and twenty-three high, on which is placed another square of about half the same size and elevation. Upon this stands a column of twenty feet diameter at the bottom, and fourteen at the top, on which the statue of Washington is placed, 163 feet from the ground. Its literary and scientific institutions are very respectable. St. Mary's college was incorporated as a university in 1806, and is well endowed. It has a good library with a philosophical and chemical apparatus; and is under the direction of a president, a professor of divinity, one of moral, and one of natural, philosophy, one of the belles lettres, four of languages and mathematics, besides eight assistant tutors. The number of students is generally about 140; but they are admitted at a much earlier age than in the universities of England. The medical college was founded in 1807. It received a new charter in 1812, when it was denominated the university of Maryland, and was authorised to annex the other faculties of languages, arts and sciences, law and divinity, to that of physic; but the medical department was the only one lately in operation. The building is spacious and elegant, and the instruction is under the direction of a provost and six professors of anatomy, &c. There is another literary institution, called the Baltimore college. Four daily newspapers are published here. Above sixty flour-mills, besides forges, &c. are placed on the stream, within a few miles of the town, and add greatly to its trade. In 1814 an attack was made on this city by the British troops under General Ross, but they were repulsed and their commander slain: a structure, called the Battle monument, commemorates this circumstance. A rail-road extends from Baltimore to Pittsburg, a distance of 300 miles.

Baltimore, a town of Ireland, in the county of Cork, on a head land, running into the sea, five miles north-east of Cape Clear.

Baltimore Bird. See **Oriolus.**

BALTINGLASS, a town of Ireland in the county of Wicklow, where are manufactures of woollen, linen, and diaper. It is situated on the Slaney, forty-nine miles south of Dublin.

BALTUS (John Francis), a French Jesuit, born at Mentz in 1627, was librarian at Rheims, and wrote an Answer to Fontenelle's History of Oracles, printed at Strasburg, 8vo.

BALTZAR (Thomas), an eminent musical composer, and the finest performer on the violin of his time, born in Lubec. He came into England in 1658, and lived about two years with Sir Anthony Cope, of Hanwel, in Oxfordshire. He was the great competitor of Davis Mell, who, though a clockmaker, was, till Baltzar came hither, allowed to be the finest performer on the violin in England; and after his arrival he divided with him the public applause, it being agreed that Mell excelled in the fineness of his tone and the sweetness of his manner, but Baltzar in the power of execution and command of the instrument. It is said of the latter that he first taught the English the practice of shifting, and the use of the upper part of the finger-board. Baltzar shortened his days by excessive drinking, and was buried in Westminster abbey, in 1663.

BALVAG, a river of Perthshire, which runs through and connects the lakes, Lochdoine, Lochvoil and Loch-Lubnaig, in the parish of Balquhidder. It abounds in trout of different species, char, &c. and has occasionally a few salmon.

BALVAIRD, a district of Perthshire, in the parish of Abernethy, memorable for one of those monuments of ancient ingenuity and superstition, called rocking stones. It is mentioned by Buchanan, but has long ago lost its motion; being choked up with earth and gravel. There is another, still movable in the parish of Dron.

Balvaird Castle, an ancient edifice in Perthshire, among the hills, in the south-west corner of the parish of Abernethy; which belonged originally to the Murrays of Balvaird, and is now, along with the estate, the property of the earl of Mansfield.

BALUE (John), a native of France, born about 1420. His parents were in low circumstances, but by art and servility he obtained several rich preferments, and at last was made bishop of Angers, when his old patron of that see was deposed. He afterwards got a cardinal's hat from Paul II. But a correspondence which he had engaged in with the dukes of Burgundy and Bern, to the disadvantage of Louis, being discovered, he was seized and confined in an iron cage eleven years. After his liberation he went to Rome, from whence he was sent as legate by Sixtus V. to France. He died in 1491.

BALVENIE, or **Balveny**, a mountainous district of Scotland, in the county of Banff, on the western side, watered by the Spey, where there is a noted rock, which produces hones and whet-stones sufficient to supply the whole island. Here are also veins of alum-stone, and springs of alum water.

Balveny Castle, an ancient fort;

NT CRAG, a remarkable hill or rock, in
of Mortlach in Banffshire, exhibiting,
adjacent grounds, a great deal of pictu-
ral scenery, and a pleasing mixture of
and the wild.

STER, *n. s.*
TRADE, *n. s.*
TERED, *part.* & *adj.*
} Fr. *ballustre*, Span. *balauster*, Ital. *balaustrio*, Gr. *βαλαυ-*
flower in blossom of the pomegranate.
son, however, derives it from the Italian
a, a spike-hole, or loop-hole, to shoot
Baluster is sometimes corruptly written
A small column or pilaster from an
three quarters to four inches square, or
: their dimensions and forms are various.
frequently adorned with mouldings;
placed with rails on stairs, and in the
galleries in churches. *Balusters*, when
d form a *balustrade*.

> hould first have been planched over, and
> ut with *balusters*. *Carew.*
>
> ces and *balustrades* built along the river, are
> rown with roses. *Swinburne's Travels.*
>
> ere is a vista, there the doors unfold,
> alconies here are *balustred* with gold.
> *Dryden's Art of Poetry.*

STRADE, *n. s.*; from baluster; an as-
of one or more rows of little turned
alled ballusters, fixed upon a terrace, or
of a building, for separating one part
ther.

ZE, (Stephen) a French writer, born in
d educated at Toulouse, where he was
d by the archbishop, after whose death
ppointed librarian to M. Colbert. In
king made him professor of canon law,
him a pension, with the post of direc-
e royal college, for writing the lives of
s of Avignon; both of which advantages
lost in the fluctuation of court parties;
nserted some offensive notes in his Ge-
al History of the house of Auvergne. He
more famed for collecting ancient MSS.
trating them with notes, than for his own
tions. He died in 1718.

YUR, or BALIUR, a sea-port of Africa,
ingdom of Dancali, about fourteen hours
west from Babel-Mandel. It is remark-
y for being the landing place of the Abys-
atriarch, Alphonsus Mendez, with his
nd Portuguese, April 3d, 1724.

ZAC (John Lewis Guez de), born at An-
in 1595. Voltaire allows him the merit
g given numbers and harmony to the
prose, but censures his style as bombastic.
l Richelieu gave him a pension of 2000
ith the titles of counsellor of state and
rapher of France. He died in 1654;
buried in the hospital of Notre Dame
es, at Angoulême to which he bequeathed
livres. Besides his Letters, he wrote a
lled Œuvres Diverses, i. e. on various
; The Prince; The Christian Socrates,
d many other pieces, which have been
d in two volumes folio.

, BEAM, being initials in the name of
e, usually imply it to have been woody;
Sax. beam, which we use in the same
this day.—*Gibson.*

BAMAH, a high place in Jerusalem, where there was an idol temple.

BAMBA, the largest province of the kingdom of Congo, in Africa. It is situated between the rivers Ambriz and Csanza; the last of which parts it from Pemba on the east, as the Ambriz does from the province of Sogno on the north. Along the sea coasts it extends on the north to the river Lelunda; and on the south to the Danda, which parts it from the kingdom of Angola. The governors of this province bear the title of dukes, and are almost independent of the king. The soil is very fertile, and would produce all the necessaries of life in great plenty, were the inhabitants industrious in its cultivation. The sea coasts produce a vast quantity of salt, which could be purified with little trouble. The fishery of the zimbis, or little sea-snail, is here carried on, whose shell is the current coin, not only in this and the neighbouring kingdom, but also in the most distant parts of Africa. Here are also said to be mines of gold, silver, quicksilver, copper, tin, and iron, but the iron mines alone are allowed to be worked. Bamba, the capital, is thirty leagues inland. The other chief towns are, Panza or Penga, in a plain between the rivers Ambriz and Loze, and Mosulla or Marsoula.

BAMBARAH, an ancient city of Sinde, in Hindostan, supposed to have been the ancient Braminabad, a city which, in the tenth century, was the residence of a dynasty of Hindoo princes, when it had regular bastions (and corresponding defences), to the number of 1400, seventy yards distance.

BAMBARRA, one of the largest and most powerful kingdoms of central Africa, bounded on the west by Kaarta and Manding, on the south by Ludamar and Beeroo, on the east by Tombuctoo and Baedoo, and on the south by Kong and Mamana. It is generally placed between 12° & 18° N. lat. and about 20° W. long. The country, though in some parts desert, is in general very fertile, and often reminded Mr. Park, he tells us, of the finest parts of England. Besides the usual productions of this part of Africa, it yields the shea tree, the kernel of which forms a species of vegetable butter. The Niger traverses it from west to east, and is navigable by canoes through the whole extent of Bambarra. The inhabitants tan sheep and goat skins, smelt iron, are pretty good smiths, and make a tolerable sort of beer of durrah, (sorghum vulgare), and the lotus-berries, (zyzyphus lotus). The land about Kabba was so well cultivated, as to remind Mr. Park of England. Their language is a dialect of the Mandingo. Their canoes are large, formed of two trunks of trees joined together, but have neither sails nor masts. Mr. Park, in travelling, passed through many populous towns. Sego, the capital, he supposed to have 30,000, Sansanding, 10,000 or 11,000, and Jenne probably more inhabitants. Baedoo is tributary to the king of Bambarra, and some accounts represent Tombuctoo also to have fallen under his dominion. The inhabitants consist of a mixture of Moors and Negroes; and though the sovereign is a Negro, the administration of many of the towns is in the hands of the Moors. That people are the most intelligent, active, and commercial of the two; but their character is harsh, severe, and intolerant; whereas the Negroes are gentle and kind, the influence of which Mr. Park frequently experienced. The slaves brought from Bambarra are the most valued of any, both on the coast, and in Barbary. The trade with the coast is carried on by slateas, or travelling merchants; that with Barbary by the Moors from across the desert, either directly into Bambarra, or through the channel of Tombuctoo; and although Bambarra itself does not produce gold, it is the medium through which that of Manding, Kong, and Bambouk, is transmitted to many other parts of the continent. Mr. Park could form no satisfactory conjecture of the number of the inhabitants altogether. The name of this country was hardly known a few years ago. Its only traces in history are, that Mouette, in his History of Meuly Archy, (Múlâï Rashìd,) tells us, when Sìdí Alí, the Morâbit, who had reigned at Sûs, was obliged to fly into Nigritia, he took refuge with the king of Bambarra, and raised an army of negroes, whom he led into the empire of Morocco. This enabled Múlá ï Ismaìl, the successor of Rashìd (Archy) to make the conquest of Tombuktù. Thence arose the influence of the Moors over the Negro countries. Their conversion to Mahommedanism is probably of more modern date. Mungo Park's kind reception here, together with the treatment Mr. Docherd experienced, during a residence of several months on the banks of the Joliba, inspires the hope that we might establish a friendly intercourse between Ségò and the coast. Mr. O'Beirne was sent, in March 1820, by the governor of Sierra Leone on a mission to the Almámi (Imàm) of Tímbò, and found there an envoy from Dhaa, king of Ségò, sent to apologize to the governor for the detention of Mr. Docherd. Lieutenant Lang of the second West India regiment, offered to accompany this envoy back to Ségò; and the envoy quitted Sierra Leone for Fútah Jallou, in July 1821. Jenne is now under an independent Fellatah chief.

BAMBERG, a large handsome town and bishopric of Franconia in Germany, now forms part of the circle of the Maine and of Reizat, in Bavaria. It was formerly imperial, and the bishop was director of the circle of Franconia. He enjoyed the privileges of an archbishop, immediately under the pope, and was the fourth among the spiritual princes of the empire. In 1007 the emperor Henry II. created his chancellor the first bishop of Bamberg, and the succession was regular until it was secularised and assigned to Bavaria in 1803. The diocese included 1430 square miles, and more than 200,000 inhabitants. The number of towns was nineteen. The bailiwics exceeded fifty, and the villages and hamlets were estimated at 1200. The whole of Bamberg, including the secularised convents, is supposed to yield about £150,000 a year to the crown of Bavaria. The country produces plenty of corn, fruits, and liquorice, and the manufactures of chintz and iron are flourishing. The town has an university, founded in 1147; and is situated at the confluence of the rivers Maine and Reidnitz. It is in part surrounded by walls and ditches. The cathedral, with its four towers and rich treasury, the abbey of St. Michaelsberg, th ten monasteries and nunneries (now mostly suppressed), the sixteen churches, the fifteen chapels the new episcopal residence of Petersburgh, buil by bishop Lotharius in 1702, the tombs of th emperor Henry II. and his wife, of Conrade III and pope Clement II., are all worthy of regard A Carmelite monastery, which is now secularised contained a library of 14,000 volumes, beside many curious manuscripts; and valuable collections of books exist in the cathedral church and in the abbey of St. Michaelsberg. This last establishment stands on a hill, and commands a delightful prospect. The university was converted into a lyceum in 1802. This place is noted for its abundant vegetable markets; not less than 400 market-gardeners being resident here. It has been laid under several contributions by the Russians and the French. It is supposed to contain 20,000 inhabitants.

Bamberg, a town of Bohemia, situated at the foot of a mountain, in long. 16° 50′ E., lat. 49° 53′ N.

BAMBELE, in zoology. See Rutilus.

BAMBO, in commerce, an East Indian measure, containing five English pints.

BAMBOCCIO, a celebrated painter of conversations, landscapes, cattle, &c. was born at Laeren, near Naarden, in 1613. His name was Peter Van Laer; but in Italy they gave him the name of Bamboccio, on account of the uncommon shape of his body, the lower part being one-third part longer than the upper, and his neck so short that it was buried between his shoulders. He had, however, an ample amends for the unseemliness of his limbs, in the superior beauties of his mind; he was endowed with an extensive genius; and, indeed, he had an universal taste for every part of painting. See Van Laer.

BAMBOO, an Indian plant of the reed kind It has several shoots much larger than our ordinary reeds, which are knotty, and separated from space to space by joints. The importance of this plant to vast regions of the East, may well excuse our dwelling on some modes of its culture, and its peculiarities.

Botanists have generally ranked it with other reeds. Linnæus, in the Systema Naturæ, describes two species, under the genus bambusa, which is characterised by scales three, covering the spikelets, which are about five flowered; calyx none; corolla, a two valved glume; style bifid; seed one. But Loureiro, who saw it in its own climate, characterises it as having flowers with six stamina; panicle diffused, with imbricate spikelets; branches of the culm spiny; calyx one flowered. We shall not discuss its minute botanical characters, as it is the practical cultivation and great utility of the plant to which we would engage the reader's attention.

A native of the warmer climates only, though often growing luxuriously beyond the tropics, the bamboo rises to the height of forty, sixty, or even eighty feet, with a slender, hollow, shining, stem. Many, however, are only twelve or fifteen feet high; and those which attain the greatest height here mentioned are rather to be viewed as overgrown. The stem is extremely slender, sometimes not exceeding the thickness of five inches m which are fifty feet high, and in others, fifteen or eighteen in diameter; the whole d into joints separated by knots or inter-, between which are distances varying from inches to several feet. Alternate branches from the base to the top; which, with the d leaves of the knots, give the whole tree t elegant appearance.

will sometimes vegetate three or four inches single day, and it has been seen to rise y feet, and as thick as a man's wrist, in five weeks. Its full dimensions are frequently, ore, attained in a year; and the only change vards, is greater thickness and induration of ood. Towards the root it is solid and com- and the cells of the stem become wider oportion as they ascend. In Malabar it is to bear fruit when fifteen years old, and that n dies.

ere seem to be several species which have yet been recognised by systematic botanists. bserver of the bamboos of China, in general, iders that there are nine species or varieties, an observer of those in Cochin-China, admits ight. The former judges the difference to ist, first, in the size and height, for there is the greatest disparity in those that are full n; and it has been supposed that some, if ll species, originally spring of their ultimate neter, which receives no accession. Secondly, distance of the knots, or length of joint, h, in certain species of full-grown bamboo, is four inches, while, in others long and slen- they are nine or ten feet asunder. Thirdly, he color of the wood, which is whitish, yel-, brown, pale blue, or speckled. Fourthly, he size and form of the knots, some swelling from the stem above and below; some en- ling it like a cord; and those of the most sin- r kind, which do not penetrate within to rupt the tubular part of the bamboo. Fifthly, he surface and figure of the internodes being melled or covered with tubercles; and a kind id to exist, called the square bamboo. The ished surface is also of different quality. hly, the substance and thickness of the wood, h, varying without any relation to the dimen- of the plant, afford sufficient characteristics onstituting a species. The wood is either soft tender, or very hard and of great strength; the stem is either very thin and hollow, or st totally filled up and solid, like other trees. elsewhere, in Bangalore for example, this ity is not ascribed to the difference of spe- but to the tardiness of its growth in stony- s. Seventhly, it is said that there are bam- entirely devoid of branches, however old may be; while others protrude as they g from the earth. Eighthly, there is a difference both in the hue and figure of the s, as also in their size; they are bluish, ash-, reddish, or mottled. Some are so large make good fans. Ninthly, the roots, though y, are found in one species to penetrate the earth like a tuft of filaments.

is plant is to be found growing wild in most of the east, and is resorted to as occasion res. It is regularly cultivated in plantations e more genial climates, and preserved in others in green-houses, &c. It succeeds best in low sheltered spongy grounds, but the immediate contact of the root with water is said to be fatal to it. They propagate it by shoots, deposited in pits at the close of autumn or commencement of winter, eighteen inches or two feet deep; and if it be designed to obtain bamboos of considerable size, the scyons are cut over as they spring up. It flourishes but in large plantations, as the plants yield considerable shelter to each other in their progress. As they run from the ground they are propped up and trained with rods of a proper height; and if complete plants, are cut over, in order to obtain suitable shoots, which are chiefly sought after. This, also, makes the root strike out and take a secure hold of the ground. The plantation, in rainy seasons, is generally drained by a ditch, as it decays very fast in too damp grounds. To obtain good Bamboos, it is not uncommon to take a vigorous root with firm wood, and transplant it, leaving only four or five inches above the joint next the ground. The cavity is then filled with a mixture of horse-litter and sulphur. Sometimes the shoots are destroyed at an early stage during three successive years; and those springing in the fourth are then said to resemble the parent tree.

The earliest shoots of this plant are edible, and are served up at table in autumn like asparagus; in a similar manner with that vegetable, also, they are earthed over to keep them: they are also salted and eaten with rice. A fluid of grateful taste and odour is yielded from the hollow joints as the plant grows up, affording an agreeable beverage. In its further progress this becomes a concrete substance called tabaxir or tabascheer, highly valued for its medicinal properties, and apparently a species of siliceous earth. It resists the impression of acids, is indestructible by fire, and with alkalies forms a transparent glass. A decoction of the leaves of the bamboo is recommended in the east for coughs and sore-throat; the bark for fever and vomiting; the buds as a diuretic; and a compound of the root with tobacco-leaves, betel-nut, and oil, forms an efficacious ointment. Many of the poorer classes in the most populous countries subsist entirely upon it in times of scarcity. The Hindoos eat its seeds roasted, mixed with honey as a delicacy, equal quantities of each being put into a hollow joint, coated externally with clay.

From the copious draught which a joint of the bamboo naturally yields, mankind are taught its use as a vessel for carrying water, and in some places no other bucket is employed. Many eastern nations build their houses solely of the bamboo-wood; entire, it forms their posts or columns; split up, it serves for floors or rafters; or, interwoven in lattice-work, it is employed for the sides of rooms, admitting light and air The roof is sometimes, also, of bamboo, for which two of its species are described to be specially adapted; and when split, which is accomplished with the greatest ease, it can be formed into lath or planks. Vessels of all kinds are framed out of it likewise, and fitted for sea. The hull is taken from the stem; and some of the strongest plants are selected for masts of boats. In Bengal, a boat of four or five tons may be furnished with both mast and yard from the same bamboo, at the cost of threepence; and the masts of larger vessels are sometimes formed by the union of several bamboos built up and joined. Those of considerable dimensions are used in the higher yards of larger ships, for which, by their great strength and lightness, they are well adapted.

This important plant is also employed in the construction of agricultural and domestic implements; and in all materials and implements required in fishery, with the exception of hooks and nets. In Thibet bows are made of it, by the union of two pieces with many bands; and in the same country also, it is employed for pipes, in transmitting water, for several miles, to reservoirs or gardens. A single joint is sufficiently capacious to serve as a bucket; and in some places, no other is used. In the south-west of Asia, a species of slender growth supplies writing-pens or reeds. Baskets, cages, hats, and various ornamental articles, are to be added to the catalogue of its extensive uses. By a particular process in bruising and steeping the wood or bark, also, a paste is procured that is made into paper. In short, as it has justly been observed, from its very origin until its decay, it never ceases to produce something beneficial—all that composes a bamboo is profitable, of whatever species it may be. The artists of China have each made their choice, and in the works they produce, show the advantage they have derived from it. Its uses are so numerous, so various, and so beneficial, that it is impossible to conceive how China could now dispense with this precious reed. It is no exaggeration to affirm, that the mines of this vast empire are of less importance to it than the possession of the bamboo.

Bamboo, in botany, the trivial name of a species of arundo. See Arundo.

Bamboo Habit, a Chinese contrivance by which a person who does not know how to swim may easily keep himself above water. The following account of it is taken from a letter to the author of the Seaman's Preservative. 'In the year 1730 I was passenger in a ship from Batavia to China, burden about 400 tons, called the Pridae, Francisco Xavier, commander, freighted by the English, Chinese, and Portuguese. Near the coast of China, we met with one of those storms called a tuffoon (tau song), or a great wind, which carried away all our masts, bowsprit and rudder; and in our hold we had six feet of water, expecting every moment the ship would founder. We consequently were consulting our preservation; the English and Portuguese stood in their shirts only, ready to be thrown off; but the Chinese merchants came upon deck, not in a jacket, but I will call it a bamboo habit, which had lain ready in their chests against such dangers; and it was thus constructed; four bamboos two before and two behind their bodies, were placed horizontally, and projected about twenty-eight inches. These were crossed on each side by two others, and the whole properly secured, leaving a space for their body; so that they had only to put it over their heads, and tie the same securely which was done in two minutes, and we were satisfied they could not possibly sink.'

BAMBO'OZLE, *v.*
Bambo'ozler, *n.*
Bambo'ozling.
} A cant word not used, says Johnson, in pure, or grave writings. To delude, to mislead, to cheat, to cozen, to deceive, to beguile. Synonymous with another cant term, to *humbug*, or to take in.

After Nic had *bamboozled* John awhile, John called for counters. *Swift.*

There are a set of fellows they call banterers and *bamboozlers*, that play such tricks. *Arbuthnot.*

But, says I, sir, I perceive this is to you all *bamboozling*; why you look as if you were Don Diego to the tune of a thousand pounds. *Tatler*, No. 31.

BAMBRIDGE, or Bainbridge (Christopher), L.L.D. archbishop of York, and cardinal, was born at Hilton in Westmoreland, and educated at Oxford. He rose gradually from being rector of Aller, prebendary of Salisbury, dean of York and Windsor, &c. to one of the highest dignities of the church. In 1495 he was elected provost of Queen's college. In 1507 he was appointed bishop of Windsor, and next year archbishop of York. He was employed in different embassies to foreign princes; particularly to the emperor Maximilian I., Charles VIII. king of France, &c. But he chiefly distinguished himself in the embassy from Henry VIII. to pope Julius II. who created him a cardinal, with the title of St. Praxede, in 1511, and appointed him legate of the ecclesiastical army, then besieging Bastia. In return, our new cardinal prevailed upon Henry VIII. to take part with the pope against the king of France. There are extant in Rymer's Fœdera, two letters; the one from cardinal Bambridge to king Henry VIII. respecting the pope's bull, giving him the title of Defender of the Faith; and the other from cardinal Sinigalli, to that monarch, acquainting him he had delivered the instrument to cardinal Bambridge. He died at Rome in 1514, being poisoned by a domestic, in revenge for his having struck him.

BAMBOROUGH, or Bambrough, a parish and castle of Northumberland, on the sea coast, five miles east from Belford, and 329 north from London. It was once a royal borough, and sent two members to parliament. The castle stands upon a rock, almost perpendicularly to the sea, and 150 feet above its level. It is accessible only on the south-east side. On this spot, according to historians, stood a palace of the Northumbrian kings, built by Ina in 550. In the reign of queen Elizabeth, Sir John Forster, warden of the marches, was made governor of it after the battle of Musselburgh; and subsequently, to his great credit, his relative, Crew, bishop of Durham, purchased and bequeathed it to charitable uses. In 1757 the trustees of this charity repaired the great tower, and formed the upper buildings into granaries, for the sale of corn to the poor, at a cheap rate. A constant watch on the top of the tower is said to be kept, whence signals are made when any vessel is discovered in distress, and boats are able to put off from Holy Island when none from the land can pass the breakers. During a storm horsemen patrol the coast, to the extent of eight miles, from sun-set to sun-rise, to give notice in case of shipwreck to the castle, and where the unfortunate mariner finds an hospitable asylum. Upwards of thirty boats are always in readiness for this good work. At the expense of this fund, the last offices are also performed over the bodies of such persons as may be cast on shore. Within the castle walls are to be found a school, a valuable library, an infirmary, which receives more than 1000 patients yearly, and a dispensary.

BAMBOUCH, or Bambych, called also Magog and Hierapolis, an ancient city of Syria, not far from the Sejour, and fifty miles distant from Aleppo. It is situated in a valley, watered by a stream conveyed by aqueducts to the town from a hill twelve miles south, and in some parts by a channel twenty feet under the earth. The ancient town was surrounded by walls above thirty feet high, and nine feet thick, strengthened by towers at the distance of fifty paces from each other; it was entered by four gates fifteen feet wide, defended by a tower on each side, cased, as they still appear, both externally and internally, by hewn stone; the top was gained by a flight of steps built on arches. Various remains of the structures and sculptures of different nations and dates appear here.

BAMBOUK, or Bambuc, a country of Africa, which the Abbe Raynal states to be situated in the interior, under the twelfth or thirteenth degree of north latitude. It is not subject to a particular king; but governed by village lords, called farims. These hereditary and independent chiefs are obliged to unite for the defence of the state, when it is either attacked as a community or only in one of its branches. The territory of this aristocratical state is dry and barren. It produces neither maize, rice, nor pulse. The insupportable heat it is subject to, proceeds in part from its being surrounded by high mountains, which prevent the wind from refreshing the air. The climate is as unwholesome as it is disagreeable; vapors, which continually issue from the bowels of a soil replete with minerals, rendering it unfit to live in, especially to strangers. Its gold has made it an object worthy of notice; gold, which in the eyes of the covetous man seems to compensate for all the evils of nature, though in reality it increases them Sensible and judicious merchants, adds this author, have chosen to limit themselves to a commerce much more important, which is that of slaves.

Almost all that is known of this state is derived from a Frenchman named Compagnon, who passed a year and a half there in the beginning of the last century. Labat, Afrique Occidentale, iv. 5. He describes it as divided into three provinces, Bambouk Proper, Kincodon, and Satadore, each of which abounds with gold, but the first most particularly. The principal repositories are at Rakkon, Semayla, Hambia, and Hombadyria, at each of which appears a conical hill of moderate elevation, every part of which contains gold, combined with earth, sandstone, lapis lazuli, &c. They obtain the metal by digging deep pits, and delivering the earth to the women, who cary it to the streams, and separate the gold by the simple process of agitation in water, after the manner described in Mr. Park's second journey. When the other substances are hard, the whole is previously pounded. Those pits being only six feet square often fall in, and bury the workmen. Bambouk appears to be the main source of that large quantity of gold which is on one side conveyed down the Gambia and Senegal, and traverses the desert on the other into Barbary. The population is almost entirely of the Mandingo race. It is remarkable, however, that although they profess Mahommedanism, no marabout or priest is suffered to reside amongst them: it is said they were all expelled some years since, being detected in a conspiracy to seize the government. It is also said that they are very jealous of European visitors; and that the Portuguese and French have each in vain endeavoured to establish themselves here.

BAMBYCE, an ancient city of Parthia, called also Hierapolis: famous for the rich and magnificent temple of Atergatis, which was plundered by Crassus.

BAMEENY, Vamani, an island lying off the coast of Chittagong, in the province of Bengal, formed by the sediment deposited by the great River Megna. It is twelve miles long by about five broad. The East India company have here an extensive establishment for the manufacture of salt, of which they retain the monopoly.

BAMFF, or Banff, a county of Scotland, comprehending Strathdovern, Boyn, Enzie, Strathaven, Balvenie, and part of Buchan, extends fifty miles from east to west, and thirty in breadth from north to south. On the south it is separated from part of Buchan by the river Ugie; on the east it is bounded by the Deveron and the German Ocean; on the west by the Spey and the county of Moray; on the south-west by Badenoch and the Braes of Mar; and on the north by the Moray Frith. The face of the country is agreeably diversified with hills and dales, woods and rivers; and exhibits many seats and plantations. The air is pure, the climate healthy, and the soil fertile, producing plentiful crops of corn. The pasture grounds feed sheep, cattle, and horses; the arable lands produce plenty of corn; while the rivers and sea supply great quantities of fish. The manufactures of this county never were considerable; and those of yarn and cloth, as well as the cotton manufacture, have declined of late. Coarse woollen stuffs are made for the use of private families and tan-works; breweries, rope works, &c. have been established on a small scale. The principal exports of Bamff are grain, fish, butter, cheese, yarn, and linen; while the imports are flax, hemp, leather, iron, coals, wood, and wine. Various minerals have been found in different parts of the shire; and a piece of amber, as large as a horse, was once cast ashore on the beach. Gordon castle, and several other seats of the duke of Gordon are situated in this county. It sends a member to parliament. Here are numerous remains of antiquity, consisting of cairns and tumuli, exhibiting the triumphs of our ancestors over the Danes, whose sculls they have built into the solid walls of churches. Also the ruins of several forts, castles, and monasteries. The valued rent of the county is £79,200 Scots; and in 1811, according to the assessment of the property tax, the real gross rent of the lands was £79,396 3*s*. 4*d*., and of the houses £5514. 2*s* sterling.

Bamff, the capital of the county, is pleasantly situated on the south side of a hill, at the mouth of the Deveron. A fine bridge of seven arches crosses the river. It has several good streets; of which that with the town-house in it, adorned with a new spire, is very handsome. This place was erected into a borough by a charter from Robert II. dated October 7th, 1372, endowing it with the same privileges, and putting it on the same footing with the burgh of Aberdeen; but tradition says it was founded in the reign of Malcolm III. The harbour is bad, as the entrance at the mouth of the Deveron is very uncertain, being often stopped by the sands, which are continually shifting in great storms; the pier is therefore placed on the outside, and defended by a half-moon battery of eight guns. Manufactories of thread, cotton, and stockings, are carried on to a considerable extent, and great quantities of salmon are annually exported. About Troop-head some kelp is made; and the adventurers pay the lord of the manor £50 yearly for the liberty of collecting the materials. Near the town is a magnificent seat of the earl of Fife. It lies in a beautiful plain washed by the Deveron, the lofty banks of which, clothed with wood on the opposite side, afford a delightful contrast to the soft vale beneath.

Bamff has two fairs, on the first Tuesday in February, and the third Tuesday in December, both old style. Long. 2° 15′ W., lat. 57° 35′ N. The parish is about six miles in length, and two in breadth. The sea coast is bold and rocky. A great part of the parish, though it might be easily converted into arable land, is occupied in pasturage. Population about 3000.

BAMIAN, an ancient city and province of Asia, to the north-west of Cabul, ten days journey from Balkh. It is remarkable alike for having been once the metropolis of Buddhism, and for its dreadful catastrophe, when taken by Jenghiz Khan in 1221. At that time it belonged to Sultan Jalallodin, the last of the famous Mahmud of Gazni's race. Jenghiz was about to attack Gazna, that prince's capital, but was stopped by the garrison of this place, which he had hoped would give him no trouble. In this, however, he was disappointed. The people had for a long time expected an attack, and had therefore ruined the country for five or six leagues round, while the peasants had carried away the stones, and every thing that could be of use to the besiegers. Accordingly Jenghiz Khan having erected wooden towers, and planted his engines upon them, was obliged to suspend his operations, till millstones and other materials could be brought from a great distance. The walls of the city were very strong, so that the engines of the Moguls made little impression; and the garrison, making frequent and furious sallies, cut off whole squadrons of his troops, and frequently overthrew his towers and engines. This so exceedingly chagrined Jenghiz that he swore to be revenged. To exasperate him yet farther a young prince, his grandson, was accidentally slain in the siege. At last, therefore, by the numberless multitude of the Moguls, who continued their attack without intermission, the city was taken, its walls had been ruined in many places, and the bravest soldiers and officers of the garrison slain in its defence. The mother of the young prince, who had been killed, entered with the troops, and caused the throats of every one of the inhabitants to be cut, we are told, without exception, and even gave orders to destroy the women with child, that not an infant might be left alive! Further, to gratify the rage of this inhuman monster, the buildings were levelled with the ground; the cattle, and every living creature, destroyed; insomuch that the hardened Moguls themselves gave this place the name of Maubalig, or the unfortunate city. A castle has since been built out of its ruins.

The place now appears surrounded with grottoes, or caverns (several of which are inhabited), excavated from an insolated mountain. Many of these abound with carved work and sculptures, and the remains of ancient paintings. Mr. Wilford (As. Res. vi. 462), says 'it was formerly called Budd'h Vámíyan, 'the most beautiful and excellent,' (a name still frequently given it by the followers of Buddha), and maliciously corrupted by the Mussulmans into But-Bámiyàn, 'idolatrous Bámiyàn.' It has been called by historians the Thebes of the east; and here are two colossal statues, seventy-five feet high, hewn out of the rock, standing in alto relievo against the wall of the niches in which they are enshrined. A third, of less colossal dimensions, being only fifteen cubits high, stands at a small distance. The orthodox say they represent B'hima and his family; the Budd'histi maintain that they are Sháhámà and his disciples Sálsálà; while the Mussulmans affirm that they are no other than Adam and Eve, in the shape of Cayúmars, and his consort. Between these opinions it would be presumptuous for us to decide. A door, between the legs of the largest, opens into a temple still served by a few Brahmins. The province contains several villages, and decent towns.

BAMIER, a plant common in Egypt. It produces a pyramidal husk, with several compartments, of the color of alemon, and filled with musky seeds The husk dressed with meat is a wholesome food, and of a very agreeable flavor. The Egpytians make great use of it in their ragouts.

BAMMAKOO, a considerable town of Bambarra, in Africa, situated on the Niger, at the point where the navigation higher upwards is interrupted by cataracts. It carries on a great trade in salt. It is 180 miles south-west of Sego. Long. 5° 48′ W., lat. 12° 50′ N.

BAMOO, a province on the north-east frontier of the kingdom of Ava. Also a town situated on the river Irrawaddy, 170 miles N.N.E. of Ummerapora, where a considerable trade is carried on with the Chinese.

BAMORI, a village in Northern Hindostan, where an annual fair is held, to exchange the productions of the mountaineers and the inhabitants of the low countries.

BAMOTH-BAAL, one of the towns of the tribe of Reuben, which seems to have had a temple of Baal on an eminence; lying eastward, near the river Arnon, and the territory of Moab. Jerome calls it Bamoth, a city of the Amorites, beyond Jordan, in the possession of the sons of Reuben. Whether it was the same with that mentioned in Numbers xxi. is doubtful, but it appears to have been the place of encampment of the Israelites, and of Balaam's first station where he had the first view of the rear of the people

BAMPFYLDE (Sir Charles Warwick), a baronet of one of the oldest and most distinguished families in Devonshire. He sat in seven parliaments for the city of Exeter, was well known upon the turf, and moved in the first circles of fashion. He received his death from an assassin named Morland, whose wife had lived in his service. The shocking act was perpetrated almost at his own door in Montague Square, where the murderer waited his approach, and after a short conversation, first discharged a pistol at his victim, and with a second blew out his own brains. April 19th, 1822.

BAMPLASOY, a town of Lower Siam, on the Gulf of Siam. Long. 101° 36′ E., lat. 3° 35′ N.

BAMPTON, or BAMPTON IN THE BUSH, a market town and parish of the county of Oxford, situated on the river Isis. It has a spacious church, a charity school for twenty children, and the remains of an ancient castle. Trade and manufacture are carried on here in leather articles to a considerable extent. Population 1232. Distant ten miles from Oxford, and sixty-nine and a half W.N.W. from London.

BAMPTON, a market town and parish of England, in Devonshire, situated on a branch of the Exe called Batham, or Batherm, where the Romans are supposed to have had artificial hot-baths, and there is still a chalybeate spring in the vicinity. It carries on a small manufacture of serge and pottery. John de Bampton, a Carmelite monk, who first read Aristotle at Cambridge, and died in 1361, was a native of this town. A battle was fought here in 614 or 620, between the West Saxons and the Britons, wherein the latter suffered great loss. Population 1452. Distant from Tiverton five miles north, and 164 west of London.

BAN, *v.* & *n.* }
BAN'NING. } Germ. *bannen, bann.* A word exceedingly various in its applications. Its primary meaning seems to be that of a public proclamation; whether the matter involved were agreeable or otherwise. It generally signifies, however, proclamation with authority; to command, or to forbid; to excommunicate, and to curse.

> I bar it in the interest of my wife;
> 'Tis she is subcontracted to this lord,
> And I her husband contradict your *bans*.
> *Shakspeare.*

> Ah, Glo'ster, hide thee from their hateful looks;
> And in thy closet pent up, rue my shame,
> And *ban* thine enemies, both mine and thine. *Id.*

> Bold deed to eye
> The sacred fruit, sacred to abstinence,
> Much more to taste it, under *ban* to touch.
> *Milton.*

> To draw her neck into the *bans*. *Hudibras.*

Shall we think that it *baneth* the work which they leave behind them, or taketh away the use thereof? *Hooker.*

Before these Moors went a Numidian priest bellowing out charms, and casting scrowls of paper on each side, wherein he cursed and *banned* the Christians. *Knolles.*

He proceeded so far by treaty, that he was proffered to have the imperial *ban* taken off Altapinus, upon submission. *Howell.*

BAN OF THE EMPIRE, a public censure, by which the privileges of any German prince are suspended.

BAN, in commerce, a sort of smooth fine muslin, which the English import from the East Indies. The piece is almost a yard broad, and runs about twenty yards and a half.

BANNS OF MARRIAGE. The instrument which publishes the bands or obligations of matrimony into which the parties enter, to the end that if any man can say against the intention of the parties, either in respect of kindred or otherwise, they may take their exception in time. And, in the canon law, 'banna sunt proclamationes sponsi et sponsæ in ecclesiis fieri solitæ.' Among the variety of applications, says a writer in the Encyclopædia Metropolitana, all deducible from its primary meaning, *ban* signified a solemn assembly of the nobility, to attend the king in arms, summoned by proclamation. To be put under the *ban of the empire*, in the ancient German constitution, was to be interdicted from all intercourse with society. The imperial *ban* was directed against cities, as well as persons, and deprived those who incurred it of all their dignities and privileges.

BANAGHER, a town of Ireland, in King's County, seated on the Shannon, over which there is a bridge of nineteen arches. It is about nineteen miles south of Athlone, and eighty-one from Dublin. This is a permanent military station, has an endowed classical school, and is the termination of the Grand Canal.

BANARES, or BENARES (Varanasi), a large district or zemindary in the province of Allahabad, situated principally between the twenty-fourth and twenty-sixth degrees of north latitude. When ceded by Asoph ud Dowlah, the Nabob of Oude, in 1775, it was divided into six and a half pergunnahs, containing an aggregate of 12,000 square miles, of which 10,000 are a fertile and richly cultivated flat, on both sides of the Ganges. The chief districts are Benares, Gazypoor, Jionpoor, and Chunar. In the Institutes of Acber, A. D. 1582, Abul Fazel describes it as follows: 'Sircar Benares, containing eight mahals, measurement 136,663 beegahs, revenue 8,169,318 dams.—Seyurghal 338,184 dams. This Sircar furnishes 830 cavalry, and 8400 infantry.' The gross revenue in 1813 amounted to 4,562,707 rupees; £570,338. 7*s.* 6*d.* of our money. At Chunár-gur'h, Mirzá-púr, and Gházi-púr, are large stone quarries; at which, on paying a moderate duty, any one may work; and the receipt for such licenses in 1816 amounted to 37,086 rupees, or £4635. 15*s.*

The atmosphere of this province is severe, and in winter renders fires indispensable; but for three months after March, becomes so heated by the setting in of the hot winds, as to destroy all verdure, and would probably prove destructive to all European artificial grasses, were the cultivation of them introduced. Garden-stuff of different kinds for Europeans, flax for oil, grains, and sugar, are nevertheless produced by the natives during the cold season. The use of flax as an article of clothing is not here understood. Every field of barley contains a mixture of grain or peas; and at the distance of six or ten feet is planted a beautiful yellow flowering shrub, used in dyeing.

The principal manufactures are plain and flowered muslins, chiefly made in the northern, baftas in the western, and sanaes in the eastern parts of the province. Tissues, brocades, and ornamented gauzes, are articles of general manufacture, from the Ganges and Goomty to the Caramnassa and Soane. The apparatus for the sugar manufactory is extremely simple; a stone mortar and wooden pistern, turned by two bullocks, constitute the most expensive part of the operation; the boiling pots are of common earthenware; the whole, in value, not exceeding twelve rupees. Salt is manufactured at Banares. Indigo and opium are annually raised and exported from many parts of the province.

The country is well supplied with water, and washed by several noble rivers and streams; of which the Ganges, the Goomty, the Caramnassa, and the Soane, are the most important; the two latter forming the natural boundaries of the province. The space from Patna to Buxar, Gazypoor, Banares, and Mirzapoor, presents a beautiful and highly fertile country, adorned with numerous clumps of mango-trees, which give the whole region the appearance of a forest, affording a shady retreat for cattle. The territory on both sides of the river, above Mirzapoor, formerly belonged to the Nabob of Oude, and exhibited a strong contrast to the flourishing state of the Banares districts, which in point of prosperity, perhaps excel all others in India, with the exception of Burdwan in Bengal.

The population of the province, according to the census taken in 1801, under the direction of the Marquis Wellesley, at that time governor-general, amounted to three millions, in the proportion of one Mahommedan to five Hindoos. The code of regulations for Bengal has, with very little alteration, been extended to Banares. The Brahmins, however, from the great veneration in which they are held by the people, are indulged with some peculiar privileges. The punishment of death in capital offences is commuted for transportation, and the process against them in criminal charges is somewhat different from that of Hindoos of a lower caste. Several evil practices of the Brahmins were, nevertheless, at the same time suppressed; as, the holding out the threat of obtaining spiritual vengeance on their adversaries by suicide; the exposure of the life, or actual sacrifice, of their own children, or near relations; occurrences which are now subject to the usual course of criminal law. One tribe of Hindoos, residing in the province, called Rajcoomars, were accustomed to destroy their female infants, from the difficulty experienced in getting them suitably married. Mr. Duncan, the resident, prevailed on them to desist from this practice; and the observance of it subjects the offender to the ordinary punishment of murder.

The most remarkable events in the history of this province are the following:—Musuram, the grandfather of Cheit Singh, possessed originally but half the village of Gungapoor; by additions to which, he laid the foundation of the zemindary, or lordship, of Banares. At his death, in 1740, his son and successor Bulwant Singh ascended the throne; and after a reign of thirty years, increased the provincial territories to their present dimensions. Cheit Singh Rájà received the zemindary in 1780; but from his refractory conduct, was expelled the province by Mr. Hastings, within one year after his accession. He lived at Gwâliyár till 1810, and his lands are still held by a collateral branch of the same family, with an annual profit exceeding ten per cent. on the revenue, derived from them by the government. *Tennant, J. Grant, Colebrooke, fifth Report, Hamilton, &c.*

The chief towns in the Banares zemindary, are Banares, in Sanscrit, Várá Nashì, from the two streams, Várá and Nashì. It lies in lat. 25° 30′ N. and long. 83° E., on the northern bank of the Ganges, which here forms a fine sweep of about four miles in length. Its elevation above the water is evident from the G'háts, or landing places, composed of large stones, to the height of thirty feet, and are supposed to have been erected by pious Hindoos, as acts of public charity. The town rises like an amphitheatre from this basis on the external curve of the river, and may be seen at once from the opposite shore, which forms an extensive level.

The great narrowness of the streets gives it the usual appearance of an Asiatic town, and the houses, which are six stories high, close to each other have terraces on their summits, and extremely small windows, to keep them cool and prevent inspection. The opposite sides of the streets in some places approach to each other so closely as to be united by galleries. The number of houses built of stone and brick, are stated at 12,000, those of mud at 16,000. The inhabitants are more than 600,000, of whom one tenth are Mahommedans; and during the great Hindoo festivals, the concourse is immense. Cási, or Cáshí, the splendid, as the Indians commonly call it, is one of the most sacred places in the whole of India; the country for ten miles round is thought holy land, and the famous lingam, supposed to be Siva, or Mahà-Déó himself, in a state of petrifaction, attracts the veneration and alms of myriads. The representatives of this invaluable relic in different parts of the city are said to be at least a million, and one pilgrim is reported to have travelled sixteen times from Banares, anciently Cási, to Raméswara or Ramisseran, opposite Ceylon. Devout Hindoos come to end their days at Banares, the same as pious Jews go to die at Jerusalem: and so great is the holy sanctity of the place, that to die there is sufficient to preserve even beef-eating Englishmen from the black realms of the Indian Pluto, the Hindoo Patàlá. One Englishman the Brahmins say did get to heaven by departing this life at Banares, and his meritorious decease is said to have been still further sanctified by the bequest of a large sum of money for the erection of a temple under the direction of his spiritual solicitor. So holy is this celebrated city that many foreign Hindoo Rajahs have vakeels or delegates residing here, who perform for them the requisite sacrifices and ablutions.

Cási, the ancient name of this city, is still retained in preference to its modern name Banares, although there are no notices concerning it in the works of ancient geographers. It is remarkable that they should omit this celebrated city, and at the same time specify Mathura or Methora and Clisobara, which are near the Jumna.

Banares is regarded as the ancient seat of Brahminical learning; and within the last century the moon beams of science have in some measure relieved the intellectual gloom which lowered upon the dark hemisphere of the inhabitants. Jaya-Sing'ha, Rájà of Amb'hér, at the close of the seventeenth century erected an observatory in this city. (Philosophical Transactions, vol. lxvii; and Asiatic Researches.) A college has also been erected by the British government, for the instruction of Hindoos in their own literature; but the influence and prejudices of the Brahmins have prevented any considerable diffusion of learning among the natives. Reading and writing are however taught here, upon a plan strongly resembling that of some modern institutions in our own country. The boys are collected on a smooth flat of sand, on which, with the finger or a small reed, they trace the letters in the sand, and learn to pronounce them at the same time.

The number of pious foundations in Banares is very great. Hindoo temples are scattered all over the city and the surrounding plain. The principal one is called Viswéswar or Bisésar, and is dedicated to Siva, whose sacred relics it contains. Aurengzebe, to mortify the Hindoos, built a splendid mosque on the highest ground of the city, and what was worse than all, on the sacred ruins of a Hindoo temple, which was destroyed to make room for it. The minarets of this edifice command an extensive view of the city, and open some of the finest prospects of the surrounding country.

The handsome houses of the English exhibit an unusual nakedness from the want of trees; but this in India is absolutely necessary, from the swarms of mosquitoes to which they afford a favorite resort. The Rajah resides at Ramnagur on the opposite side of the river, five miles from Banares. In this city are upwards of 8000 houses occupied by mendicant Brahmins, who have nevertheless considerable property of their own. Europeans in this place are few, consisting chiefly of a judge, collector, and registrar, a few other civil servants connected with the company's establishment, together with a few private merchants and planters.

Banares is the chief mart for gems and diamonds, which are brought principally from the Bundelcund country. Merchants and bankers are numerous and wealthy, arising from the great traffic of which this city is the site. The land is extremely high priced, and law suits respecting it are unceasing. The division of the court of circuit comprehends the following districts. 1. Mirzapoor. 2. Allahabad. 3. Bundelcund. 4. Juanpoor. 5. Gooracpoor. 6, City of Banares.

Cási does not appear to have been known to the Greeks, and was probably subject to the Hindoo sovereignty of Canój. In the year 1017 Sultan Mahmood of Ghizni took possession of it, together with the town of Casum or Casuma, now Patna, and went as far as the country of Ouganam or Unja, west of the Cossimbazar river. The following year he overran these countries a second time, and penetrated as far as Kisraji, Cach'ha Raja, or Cooch Bahar, from which period the Hindoos in this part of India remained unmolested by the Mahommedans till the close of the twelfth century, when it was finally included within the Mogul empire. In 1775 Banares was ceded by the Nabob of Aud'h or Oude, since which for the most part it has enjoyed uninterrupted tranquillity; and the inhabitants are fully sensible of the advantages they derive from living under the British government, with respect to the security of their persons and property.

On the 14th of January, Mr. Cherry the resident, and three other English gentlemen, were treacherously murdered by Vizier Ali, the deposed Nabob of Oude, and spurious son of the late Asoph ud Dowlah. Mr. Davis would also have fallen a sacrifice had he not, from the top of a narrow winding stair-case, on the flat roof of the house, defended himself and family with a short spear till assistance could be procured.

The travelling distance from Banares to Calcutta by Birbhoom is 460 miles, by Moorshedabad 565, from Buxar seventy, Allahabad eighty-three, Calpy 239, Kanoge 259, Bareily 345 miles. See *Lord Valentia, third Register, Wilford, and Rennel.*

BANBURY, a borough and market town in the hundred of that name, Oxon, seventy-one miles from London; containing 5400 inhabitants. It stands on the river Charwell, on the road from Buckingham to Bridgenorth, and was first made a borough by queen Mary. Its privileges were afterwards confirmed and enlarged by James I. and George I. It is now governed by a mayor, high steward, recorder, six burgesses, and thirty assistants; has a town-clerk, and two serjeants-at-mace, and returns one member to parliament. The land in this neighbourhood is particularly fine pasture, and the town was noted, in Camden's time, for the excellence of its cheese, as it is now for cakes and ale. When Holland was employed in translating the Britannia, Camden visited the printing-office, and found that to his own observation, that Banbury was famous for cheese, the translator had added cakes and ale. Thinking this remark too trifling, he changed the last word into zeal; and this gave much unintentional offence. In his MS. supplement to the Britannia, in the Bodleian library, is the following note: 'Put out the word zeale in Banbury, where some think it a disgrace, when as zeale with knowledge is the greatest grace among good Christians.' In the adjacent fields Roman coins have often been discovered, and the pyrites aureus, or golden fire-stone. A castle was built here in 1125, which was entirely destroyed in the civil wars of Charles I. Plush is manufactured here, and the trade of the town is greatly enhanced by the proximity of the Thames and Severn canal. Here are held, annually, seven fairs: those for hiring servants are called mop fairs. The church, having been of late rebuilt, is large though not handsome. The market on Thursday is reckoned the best in the county for corn, cattle, and all kinds of provisions.

BANC, or **Benca**, in law, a tribunal, or judgment-seat: Hence,

Banc, Common, means the Court of Common Pleas; and

Banc, King's, the Court of King's Bench.

BANCA, an island of the Indian Ocean, between Sumatra and Borneo; from the first of which it is separated only by a narrow channel. It is celebrated for its tin mines, the annual profit of which to the Dutch is estimated at £150,000. It is mountainous and woody. There are seven mines, which give employment to 25,000 men, originally a Chinese colony, and nominally under the direction of the sultan of Palembang, but in reality working for the profit of the Dutch East India company. The metallic sand is said to yield 70 per cent. Very little is sent to Europe; the Chinese are very skilful in adulterating it. This island, which had been captured by our forces during the late war, with the rest of the Dutch possessions in the East Indies, was given up at the peace of 1814. It had been formally ceded to us by Najmu'ddìn, sultan of Palembang, in 1812, on condition of his being placed under our protection, but this stipulation was disregarded by the Dutch authorities in Java in 1818; and they have since that period been at war with the sultàn. The straits of Banca afford a safe passage with a favorable monsoon; but as shoal water sometimes occurs, and there are occasionally coral reefs, they require great care and attention in navigating them. The Banca islands in 2° 22′ S. lat., and 105° 41′ E. long., afford shelter from S. W. by S. to N. W. with a good supply of water and fuel.

Banca, a small island of a cluster still smaller, lying off the north-east extremity of the island of Celebes, which are much frequented by the Malay pirates. Fish, turtle, and fruits, are plentiful. Long. 125° E., lat. 1° 50′ N.

BANCAL, an East Indian weight, containing 16$\frac{1}{16}$ drams Avoirdupois.

BANCALIA, old law, Lat. cushions for benches.

BANCALIS, a sea-port town on the east coast of Sumatra, where the Dutch have a settlement. It lies 130 miles west of Malacca.

BANCHI (Seraphin), archbishop of Angoulême. He was at first a priest of the Dominican order at Florence; but in 1593 one Peter Barriere, a hot-headed fanatic, having communicated to him his purpose of murdering the king, Banchi prudently revealed the matter to a nobleman, by which the horrid design was prevented from being executed. He was rewarded with the archbishopric of Angoulême. He afterwards resigned his charge, and retired to St. James's monastery at Paris, where he continued till his death.

BANCHO, or **Banquho**, thane of Lochaber, the grandfather of Walter, the first lord high steward of Scotland, and the progenitor of the royal house of Stewart. He gained several great victories over the Highlanders and Danes, in the reign of Donald VII. but his glory was tarnished by joining Macbeth in the conspiracy against that monarch; and he was murdered by the tyrant Macbeth about A. D. 1046.

BANCI Jus, the privilege of having a bench was anciently allowed to the king's judges [illegible] summam administrant justitiam. Inferior cou[illegible] as courts baron, hundred courts, &c. were allowed that prerogative; and even at this [illegible] the hundred court at Freebridge, in Norfolk, is held under an oak at Gey-wood; and tha[illegible] of Woolfry, in Herefordshire, under an oak [illegible]ear Ashton, in that county, called Hundred oak.

BANCK (Peter Vander), an engraver of considerable repute, born at Paris, and bred under the celebrated Francis de Poilly. He came over into England with Gascar, the painter, about 1674; and married the sister of —— Forester, Esq. He was a laborious artist: but the pay he received for his plates being by no means adequate to the time he bestowed upon them, he was reduced to want; and, retiring from business, sought an asylum in the house of his brother-in-law. He died at Bradfield, and was buried in the church in 1674; leaving his widow in possession of the chief part of his plates, which she disposed of to Brown, a print-seller, to great advantage, and left an easy fortune. His chief employment was engraving portraits; and according to Virtue's account of him, published by Walpole, he was the first in England who engraved them on so large a scale. Like many of Poilly's disciples, his great merit consists in the neat management of the mechanical part of the art.

BANCO, an Italian word, which signifies bank, and commonly used to signify the bank of Venice.

BANCOOK, a town in the kingdom of Siam, in Asia, with a fort, which was once in the possession of the French, but they were driven from it in 1688. The houses are made of canes, covered with palm leaves, and the inhabitants go almost naked. It is forty miles south of the city of Siam.

BANCROFT (Richard), archbishop of Canterbury, was born at Farnworth, in Lancashire, in 1544, and studied at Cambridge, where he took his degrees of B. A. M. A. and D. D. After passing successively through several gradations in the church, he was, in 1597, appointed bishop of London. In 1600 he was sent by queen Elizabeth to settle some difference between the English and the Danes. He also interposed in the disputes between the secular priests and the Jesuits, and furnished arguments to the former. In 1603 he was at the conference at Hampton Court, between the bishops and the Presbyterian ministers, and was appointed a commissioner for regulating church affairs. In 1604 he was appointed president of the convocation, and soon after elected archbishop of Canterbury, which was confirmed by king James I. His last promotion was in 1610, to be chancellor of the university of Oxford, which he did not long enjoy, for he died in 1612, of the stone, at Lambeth.

Bancroft (John), bishop of Oxford, a nephew of the above, born in Oxfordshire. In 1592 he was admitted of Christ Church, in Oxford. In 1609 he was chosen master of University College, where he continued above twenty years; during which time he was at a great deal of labor as well as expense to recover the ancient lands belonging to that foundation. He was made bishop d in 1622, and he built the palace of len for that see. He died in 1640, and rred in the church of Cuddesden.

D', v. & n. } Dut. *bende*, Sax. *band*,
'AGE, } Goth. *bandi*, Celt. *ban*. A
'OR, } tie. The noun upon which
'ER. } the verb to band is formed,
ist participle of the verb to bind. To tie, nite, join, yoke together; mutual engage-romise; to be in bonds or bondage; to ate for one common purpose. Band, in writers, is frequently written *bende*.

With a *bend* of gold tassiled,
nd knoppes fine of gold amiled. *Chaucer.*
The botiler is not my friend,
Whiche hathe the key by the *bende*.
Gower.

wrong it were, that any other twaine
a love's gentle *band* combyned bee,
whom heaven did at first ordaine,
le out of one mould the more t' agree.
Spenser.

hen it was day, certain of the Jews *banded* and bound themselves under a curse, that ld neither eat nor drink till they had killed
Bible. Acts ch. xxiii. ver. 12.

ke and his *banders* proudly pressed in.
Mirror for Magistrates.

arts are growne so false, that most are loath
it each other's words, or *bands*, or oath;
gh we had in every part an eye,
uld not search out all hypocrisy.
George Wither.

Like Maia's son he stood,
ok his plumes, that heav'nly fragrance fill'd
it wide, strait knew him all the *bands*
under watch; and to his state,
is message, high in honour rise. *Milton.*

What multitudes
banded to oppose his high decree. *Id.*

ow strike the golden lyre again,
uder yet, and yet a louder strain,
k his *bands* of sleep asunder,
rouse him like a rattling peal of thunder.
Dryden.

een, in white array, before her *band*,
took her rival by the hand. *Id.*

udden, methought, this select *band* sprang with a resolution to climb the ascent, and call of that heavenly musick. *Tatler.*

he three *bands* prepare in arms to join,
and the number of the sacred Nine. *Pope.*

k his lodging at the mansion-house of a idow, who washes, and can clear-starch his
Addison.

o, had a place among the rest, with a *ban-* her eyes; though one would not have ex- have seen her represented in snow. *Id.*

were fastened by hooks to my *bandages*, which een had girt round my neck. *Swift.*

e in their port, defiance in their eye,
e lords of human kind pass by;
on high designs, a thoughtful *band*,
ns unfashioned, fresh from nature's hand.
in their native hardiness of soul,
imagin'd right, above control;
'en the peasant boasts these rights to scan,
rns to venerate himself as man.
Goldsmith's Traveller.

While her snowy hands
From her fair brow, her golden hair unbind,
And of her zone unloose the silken *bands*,
More passing bright unveil'd her beauty stands.
Mrs. Tighe.

Pirate, thou know'st me not—but I am one
Grateful for deeds thou hast too rarely done;
Look on me—and remember her thy hand
Snatch'd from the flames, and thy more fearful *band*.
Byron.

BAND', in architecture, a low flat moulding, otherwise called a *face*, from *fascia*.

BAND is also the denomination of a military order in Spain, instituted by Alphonsus XI. king of Castile, for the younger sons of the nobility, who, before their admission, must serve ten years at least, either in the army or at court; and are bound to take up arms for the catholic faith against the infidels.

BAND OF PENSIONERS, a company of 120 gentlemen, who receive a yearly allowance of £100 for attending on his majesty on solemn occasions.

BANDS OF A SADDLE are two pieces of iron nailed upon the bows of the saddle, to hold the bows in the right situation.

BANDA ISLANDS, a group of islands in the Eastern ocean, about 130 miles E. S. E. from Amboyna! They strictly include ten separate isles, Banda Neira, Banda Lantoir, Pulo Ay, Pulo Rondo, Pulo Pisang, Rosingen, Craka, Capella, Souangy, and Gonong Apee, the last being a volcanic islet, rising 2000 feet above the level of the sea. They are all small; Banda Proper, or Lantoir, one of the largest, is only about eight miles long, and not more than three broad; Neira, another of the most considerable, does not contain much more than two or three square miles. Their rich black soil makes them generally fertile in tropical fruits; but their chief and well known produce is nutmegs, for the cultivation of which Neira, Lantoir, Pulo Ay, and Pulo Rondo, are laid out in parks or plantations. The plant attains the size of a pear-tree, with a leaf resembling that of the laurel, and the fruit, enveloped in a membranaceous covering of mace, is contained in a husk. It is of the shape of a pear when ripe, and approaches the size of an apricot: it is then pulled and put into a drying-house or kiln, where it is exposed during three months to a slow fire: the husk or shell is now broke, and the nutmeg instantly placed among lime, to prevent the attack of insects. It is afterwards made up into packages of 200 pounds each, for exportation. Each tree produces about ten pounds yearly, and an oil is extracted from the unripe and damaged fruit. Nutmeg-trees require incessant care; a great proportion of them are barren, a defect which cannot be discovered before the twelfth or fourteenth year. From this period they continue bearing until the age of twenty, four years after which they perish. The total quantity produced in the four islands the Dutch would never suffer to be ascertained. When they were captured in 1796, a half year's crop was found to amount to 81,618 pounds of nutmeg, and 23,885 pounds of mace. Formerly the average sales were estimated at 350,000 pounds of nutmeg annually, and 100,000 pounds of mace. For many of the necessaries of life these islands depend upon Java. The Dutch having subjected the original inhabitants, were the first European occupiers of the Banda islands. And their most extraordinary policy was to cultivate a portion, and carefully extirpate the trees in all the other islands. This was obviously a check upon the population. By a census taken in 1796, they were found to be 5763; in 1814 they were estimated at little more than 4000; about three-fourths of whom were slaves. The accounts therefore which formerly stated them at 15,000 whites, were most likely exaggerated.

The seat of government is Neira, where there is a good harbour, and two fortresses, public magazines and storehouses, for the produce of the nutmeg plantations. Garrisons have always been maintained in these fortresses; but they were taken possession of by Admiral Rainier in 1796, with little opposition. Being restored to the Dutch by the peace of Amiens, they were again taken by the English in 1810; and reverted to their former masters at the general peace of 1814. The latitude of these islands is between 4° and 5° S. and the longitude about 130° E.

BANDALEER, or Bandeleer, in military affairs, a large leathern belt, thrown over the right shoulder, and hanging under the left arm; worn by the ancient musqueteers, both for the sustaining of their fire-arms, and for the carriage of their musket-charges, which being put up in little wooden cases, coated with leather, were hung, to the number of twelve, to each bandaleer.

BANDALUSAN, a small island in the Eastern Indian sea, near the south coast of Mindanao. Long. 122° 58′ E. lat. 7° 12′ N.

BANDARRA (Gonzales), a Portuguese fanatic of the sixteenth century, who, pretending to be a prophet, raised some disturbance, and in 1541, made a narrow escape from being burnt for heresy, by the inquisition. He died in 1556.

BAND'BOX, *n. s.* From band and box. A slight box used for bands, and other things of small weight.

> My friends are surprised to find two *bandboxes* among my books, till I let them see that they are lined with deep erudition. *Addison.*

> With empty *bandbox* she delights to range,
> And feigns a distant errand from the 'Change.
> *Gay's Trivia.*

BAND'ELET, *n. s.* Fr. *bandelet*. In architecture, any little band, flat moulding, or fillet.

BANDELLO (Matthew), bishop of Agen, was born at Castelnovo, in the Milanese, about the end of the fifteenth century. He was first a Dominican monk, and distinguished himself by writing novels in the manner of Boccacis. When his country was invaded by the Spaniards he went to France, and there, in 1550, obtained the bishopric of Agen, but resigned it in 1555. He died in 1561. The best edition of his novels is that, printed at London, in four volumes, 4to. 1740.

BANDEL, a sea-port of Japan, on the north-west coast of the island of Niphon. Long. 131° 45′ E., lat. 34° 46′ N.

Bandel d' Agoa, a sea-port on the east coast of Africa, supposed by Dr. Vincent to be the Zergifa of Ptolemy. Long. 49° E., lat. 8 20′ N.

Bandel Caus, a sea-port on the east coast of Africa, supposed by Vincent to be the Opone of Ptolemy. Lat. 8° 15′ N.

Bandel Velho, or Old Port, on the coast of Ajan, supposed by Vincent to be situated on what the Periplus calls the Little Coast. Gosselin imagines it to be the Rhapta of Ptolemy and the Periplus. Fifty miles N. N. E. of Magdasho.

BANDEN, a hill of Scotland, in Fifeshire, which commands an extensive view of the Strath of Eden, from Kinross to St. Andrew's Bay. The remains of an ancient rampart and circumvallation, 200 yards in diameter, and of a circular form, are to be seen upon it.

BANDER-ABASSI. See Gombron.

BANDERAS, a large bay in the Pacific Ocean, on the west coast of Mexico, between Cape Corientes and Tintoque Point. Lat. 20° 30′ N.

BANDER-CONGO, a small sea-port town in Asia, seated on the east side of the Persian Gulf; eighty miles west of Gombron; and 190 of Bander-Abassi.

BANDERET, a general, or one of the commanders in chief of the forces. This appellation is given to the principal commanders of the troops of the canton of Berne, in Switzerland, where there are four banderets, who command all the forces of that canton.

BANDEROLL, a little flag, in form of a guidon, extended more in length than in breadth, used to be hung out on the masts of vessels, &c.

Band Fish, in zoology, the English name of the cepola rubescens.

BANDI. See Angola.

BANDINELLI (Baccio), a celebrated sculptor and painter of Florence, born in 1487. Though he distinguished himself by his skill in both lines, he chiefly excelled in sculpture; and his group of the Lacoon is much admired. He died in 1559.

BAND'IT, *n.*
Band'itto, *n.*
Band'itti (*plural*). } Ital. *ban* and *ditto*. It is the past participle of *dicere*, united to *ban*, excommunicated or banished; and thus signifies one declared to be banished. An exile or outlaw. Banditti are not only outlaws, but robbers, who commit their depredations in concert. Men who place themselves without the pale of society, that they may commit aggressions upon its peace and property.

> A Roman sworder, and *banditto* slave,
> Murder'd sweet Tully. *Shakspeare.*

> No savage fierce, *bandit*, or mountaineer,
> Will dare to soil her virgin purity. *Milton.*

> Just as much fidelity might be expected from them in a common cause, as there is among a troop of honest, murdering, and ravishing *bandits*. *Dryden.*

> No *bandit* fierce, no tyrant mad with pride,
> No cavern'd hermit, rests self-satisfy'd. *Pope.*

> Who are they who can be said to be govern'd by laws of their own making? I know of no such persons; I never heard or read of any such, except, perhaps, among pirates, and other *banditti*, who, trampling

livine and human, refuse to be governed
way than by their own licentious regu-
Beattie.

t. Brydone, in his Tour through
ms us, that in the eastern part, called
, from the devils that are supposed to
int Etna, it was in his time found
npracticable to extirpate the banditti;
numberless caverns and subterrane-
s round that mountain, where no
possibly pursue them: besides they
to be perfectly determined and reso-
failing to take a dreadful revenge on
ided them. Hence, the prince of Villa
raced it, as the safest, wisest, and
al scheme, to become their declared
protector. Such of them as thought
eave their mountains and forests,
aps only for a time, met with en-
t, and a certain protection in his
re they enjoyed his confidence, which
ce were they found to abuse. They
l in the prince's livery, and wore a
ir order, which entitled them to uni-
and respect from the people. The
hose whom they accompanied were
acred. For this reason travellers
a couple of them from town to town;
hus travelled over the whole island
safety.

Island, an island on the east-
sea, at the south entrance of the
mbhook, about twenty miles in cir-
115° 35′ E., lat. 8° 50′ N.

In zoology, a name of the canis
mastiff. But Dr. Johnson observes,
ginal of this word is very doubtful.
Canibus Britannicis, derives it from
a dog chained up. Skinner inclines
from *bana*, a murderer. May it not
an, a curse, as we say a curst cur; or
baund, swelled or large, a Danish
whence, in some counties, they call
ban-nut. A kind of large dog.

ry, or pert, if any bin,
great *bandogs* will tear their skin.
Spenser.

night when Troy was set on fire,
n screech-owls cry, and *bandogs* howl.
Shakspeare. Henry VI.

erset says, set the *bandog* on the bull.
Drayton.

, or Bandon-bridge, a considerable
n of Cork, in Ireland, situated on a
ame name. It is called by the Irish,
bridge), and was founded by the
Cork in 1610. The walls were de-
the Irish, in 1689, and, in conse-
his violence, papists were long pro-
residing in the town. Bandon
elongs to the duke of Devonshire
of Bandon. It returns one mem-
imperial parliament. The cotton
used to flourish here, and great
orkmen are still employed on linens,
woollens. The population is 10,179;
n Cork thirteen miles; from Dub-

A, a town of the island of Salsette, on the west coast of the peninsula on this side the Ganges.

BANDORE, a musical instrument with strings, resembling a lute, said to have been invented in the fourth year of queen Elizabeth, by John Rose, a citizen of London.

BANDROL, banderol, Fr. A little flag, or streamer; the little fringed silk flag that hangs on a trumpet.

BANDUM, or Band, is used, in middle age writers, for a flag or banner.

BANDURI (Anselm), a learned Benedictine, born at Ragusa, in Dalmatia. He studied in France, and applied himself principally to antiquities. He published, The Antiquities of Constantinople, two volumes, folio; and Numismata Imperatorum Romanorum, a Trajano Decio ad Paleologos Augustos, 1718. He died at Paris in 1743.

BAN'DY, *v.*, *n.s.*, & *adj.* Fr. *bander*, to make crooked. A club turned round at bottom for striking a ball at play; hence to bandy is to beat to and fro from one to another, to agitate, to toss about, to give and take reciprocally, to contend as at some game, in which each strives to drive the ball his own way.

The shooting stars,
Which, in an eye-bright evening, seem'd to fall,
Are nothing but the balls they lose at *bandy*.
Brewer's Lingua, ii. 6.

They do cunningly, from one hand to another, *bandy* the service like a tennis-ball. *Spenser.*

Do you *bandy* looks with me, you rascal?
Shakspeare.

No simple man that sees
This factious *bandying* of their favourites,
But that he doth presage some ill event. *Id.*

Had she affections and warm youthful blood,
She would be as swift in motion as a ball,
My words would *bandy* her to my sweet love,
And his to me. *Id.*

Could set up grandee against grandee,
To squander time away and *bandy*;
Made lords and commoners lay sieges,
To one another's privileges. *Hudibras.*

They now begun
To spur their living engines on;
For as whipp'd tops, and *bandy'd* balls,
The learn'd hold, are animals;
So horses they affirm to be,
Mere engines made by geometry. *Id*

And like a ball, *bandy'd* 'twixt pride and wit,
Rather than yield, both sides the prize will quit.
Denham.

This hath been so *bandied* amongst us, that one can hardly miss books of this kind. *Locke.*

Ever since men have been united into governments, the endeavours after universal monarchy have been *bandied* among them. *Swift.*

He that is employed, has no leisure to move in the little disputes and quarrels which trouble the peace of the mind, and which are chiefly kept up and *bandied* to and fro by those who have nothing else to do. *Atterbury.*

What vigorous arm, what repercussive blow,
Bandies the mighty globe still to and fro.
Blackmore.

She calls it witty to be rude,
And placing raillery in railing,
Will tell aloud your greatest failing;
Nor make a scruple to expose
Your *bandy*-leg, or crooked nose. *Swift.*

The Ethiopians had a one-eyed *bandy-legged* prince; such a person would have made but an odd figure. *Collier.*

Bandy Legs, are legs distorted, turning either inward or outward on either side; arising from some defect in the birth, or imprudence in the nurse, endeavouring to make a child stand or walk before his legs were strong enough to sustain the weight of his body. See Valgus.

BANE', *v.* & *n.*
Bane'ful,
Bane'fulness.
} Sax. *bana*, a murderer, according to Dr. Johnson; but it may be referred to the Goth. *banjos*, ulcers, sores, wounds, or to *bane*, destruction, death. To poison, to render poisonous, to destroy; to cause destruction or ruin.

For in his hunting hathe he swiche delite,
That it is alle his joye and appetite,
To ben himself the grate hart's *bane*. *Chaucer.*

Help me, ye *banefull* byrds! whose shrieking sound
Is signe of dreary death, my deadly cries
Most ruthfully to tune. *Spenser.*

Another righteous doom I saw of greedy gain,
With busy cares such treasures oft preserved,
Are to their *bane*. *Earl of Surrey.*

The country people use kitchen physick, and common experience tells us, that they live freest from all manner of infirmities that make least use of apothecaries' physick. Many are overthrown by preposterous use of it, and thereby get their *bane*, that might otherwise have escaped. *Burton's Anatomy of Melancholy.*

Lest Rome herself be *bane* unto herself,
And she whom mighty kingdoms court'sy to,
Like a forlorn and desperate cast away,
Do shameful execution on herself. *Shakspeare.*

Begone, or else let me. 'Tis *bane* to draw the same air with thee. *Ben Jonson.*

All good to me becomes
Bane; but in heav'n much worse would be my state. *Milton.*

They with speed
Their course through thickest constellations held,
Spreading their *bane*. *Id.*

Insolency must be repressed, or it will be the *bane* of the Christian religion. *Hooker.*

Who can omit the Gracchi, who declare
The Scipios' worth, those thunderbolts of war,
The double *bane* of Carthage? *Dryden.*

False religion is, in its nature, the greatest *bane* and destruction to government in the world. *South.*

For voyaging to learn the direful art,
To taint with deadly drugs the barbed dart;
Observant of the gods, and sternly just,
Ilus refus'd t' impart the *baneful* trust. *Pope.*

Thus am I doubly arm'd; my death and life,
My *bane* and antidote, are both before me,
This in a moment brings me to my end;
But that informs me I shall never die. *Addison.*

Thy sins are of so *baneful* a nature, that they poison even the blood of Christ unto thee. *Hopkins's Sermons.*

Then would'st thou steer, where fortune spreads the sails?
Go flatter vice, for seldom flattery fails.
Soft through the ear the pleasing *bane* distils;
Delicious poison! in perfumes it kills! *Broome.*

O *bane* of good, seducing cheat,
Can man, weak man, thy power defeat? *Gay.*

Beneath the gloomy covert of a yew,
That taints the grass with sickly sweats of dew;
No verdant beauty entertains the sight,
But *baneful* hemlock, and cold aconite. *Garth.*

When it is now clear beyond all dispute, criminal is no longer fit to live upon the e is to be exterminated as a monster, and a human society, the law sets a note of infa him, and puts him out of its protection. *Bl*

So gentle life's descent,
We shut our eyes, and think it is a plain;
We take fair days in winter for the spring;
And turn our blessings into *bane*.

But quiet to quick bosoms is a hell,
And there hath been thy *bane*.

Bane Berries, a name given to the spicata, or herb christopher.

Banewort, *n. s.* From bane and w plant, the same with deadly nightshade.

BANG', *v.* & *n.* Dut. *bengeler*, to be sticks, clubs, &c. Swed. *bana*, to strik northern provincialism, to beat. To b strike, to hit hard; to give repeated heavy Figuratively applied to speech; thus to *bang*, is to scold, and overpower others b lent noisy abuse.

The desperate tempest hath so *bang'd* the T
That their designment halts. *Sh*

You should accost her with jests fire-ne the mint; you should have *banged* the you dumbness.

I am a bachelor.—That's to say, they are f marry; you'll bear me a *bang* for that.

With many a stiff twack, many a *bang*,
Hard crab-tree and old iron rang. *H*

I heard several *bangs* or buffets, as I though to the eagle that held the ring of my box in hi *Swift's G*

He having got some iron out of the earth into his servant's hands to fence with, and b another.

Formerly I was to be *banged* because I strong, and now, because I am too weak, to r am to be brought down when too rich, and op when too poor. *Ar*

But, dear Mr. Bickerstaff, convince 'em harsh and irregular sound is not harmony; so is *banging* a cushion, oratory.

BANGALOOR, or Bangalore, a fort the peninsula of Hindostan, seventy-four from Seringapatam, the capital of the M Hyder Ali constructed the fort there, which T Saib destroyed, as useless against Euro Here, however, he built a palace, and la extensive gardens. It is a good place for especially in the betel-nut, black-peppe sandal wood. Woollen cloths, &c., and of strong silken stuff, are manufactured Bangaloor was annexed to the Mysore in was taken by assault, under lord Cornwalli plundered by the army.

BANGASSI, a large fortified town of doo, in Africa. Long. 6° 45' W., lat. 13°

BANGERMOW, a considerable town o dostan, in the province of Oude. Lon 25' E., lat. 26° 48' N.

BANGEY, a cluster of small islands Molucca passage. Long. 124° 15' E 1° 45'.

BANGIUS (Peter), a Swedish divine, b Helsingborg in 1633. He became profe theology at Abo, where he continued thir years; and in 1682, obtained the bisho

. He died in 1696, leaving, besides
orks, an Ecclesiastical History of Swe-
d a Treatise on Sacred Chronology.

ius (Thomas), a Danish divine, born in
: was professor of divinity, philosophy,
rew, at Copenhagen; and distinguished
as an elegant Latin writer, on the origin
ages, and other subjects. He also pub-
Hebrew lexicon. He died in 1661.

GLE, *v. a.* To waste by little and little;
der carelessly; a word now used only in
tion.

> *bangle* away the legacy of peace left us by
> is a sign of our want of regard for him.
>
> *Duty of Man.*

GLOR, a town in the Mysore territory,
niles south-east of Bangaloor.

GOR, or Bangor Fawr, i. e. the great,
nt city and parish, in the hundred of
orffai, county Caernarvon, North Wales,
near the Menai strait, at the foot of a
us rock, and near the embouchure of the
river, called generally "Aber Cegin."
36½ miles from London, nine from
on,and fifteen from Conway. It is a place
trade, and has grown up with a rapidity
nprecedented. It consists of one street,
n length, from which several branches
ards the Menai. The public buildings
athedral, bishop's palace, town-hall and
ouse, spacious chapels erected by the
s of various denominations, a free-school,
y, and inns, which are on a scale of
gnitude as places them beyond the
private edifices. The trade here is
ble; slates, raised and worked at the
of Dolawen, form the principal export.
conveyed a distance of seven miles on
d, and shipped at the quay of Port
. A manufacture of writing slates,
pieces, cisterns and other useful articles,
from the Bangor slate, is carried on at
to which may be added an iron foundry,
ding, and the various trades connected
, as the most prominent amongst the
ents in which the inhabitants are en-
Since the erection of the Menai bridge,
s from the city, and the transit of the
d through, it is calculated that up-
50,000 strangers have annually visited
The valuable quarries just mentioned,
of Penrhyn, the spacious inn, and the
xon castle about a mile from the city,
property of G. H. Dawkins Pennant,
resentative and heir of the ancient
f Penrhyn. The see of Bangor was
by St. Deiniol, A. D. 525. It includes
, Caernarvonshire, except four parishes,
parishes in Denbighshire, and seven
omery. It is divided into three arch-
s, Anglesea, Bangor, Merioneth, the
being held in commendam with the
. The first cathedral was destroyed by
ns, A. D. 1071. King John rebuilt
1212, which was mutilated in the wars
nd burned down in 1402. Bishop Deane
he present nave, and Dr. Skeffington
e tower in 1532. It was plundered by
bishop Bulkeley about the year 1547, who actually sold the bells for his private advantage. It is now in good repair, the choir handsome, and the fine nave converted into a parish church for the accommodation of the dense population of this prosperous place. Here is an effigiated tomb of Owen Gwynedd, prince of Wales, who was interred here in 1169. The city is governed by the bishop, who is lord of the manor. The free school was founded by Dr. Jefferey Glynn, A. D. 1557, and enjoys an endowment of £400 per annum. The ancient castle of Bangor was erected by Hugh, earl of Chester, in the reign of William II.: no traces of it now remain. Bangor is one of the boroughs contributing with Caernarvon in returning a member to parliament. Population about 4000. Markets are held on Fridays, and there are four fairs holden here in each year. See Menai Bridge.

BANGOR Ferry, see Menai Bridge.

BANGOR, county Down, Ireland; this place gives title of viscount to the family of Ward.

BANGORIAN Controversy, so called from Dr. Hoadly, bishop of Bangor. It arose from a sermon preached by him before his majesty king George I. at the royal chapel, St. James's, on Sunday, March 31, 1717. Mr. Belsham, in his Memoirs, vol. i. p. 174, gives the following account of this controversy:—'As the foundation of this famous discourse, the bishop chose the declaration of Christ to Pilate: My kingdom is not of this world: and the direct and undisguised object of it was to prove that the kingdom of Christ, and the sanctions by which it is supported, were of a nature wholly intellectual and spiritual; that the church, taking the term in its most unlimited signification, did not, and could not, possess the slightest degree of authority under any commission, or pretended commission, derived from man; that the church of England, and all other national churches, were merely civil or human institutions, established for the purpose of diffusing and perpetuating the knowledge and belief of Christianity, which contained a system of truths, not in their nature differing from other truths, except by their superior weight and importance, and which were to be inculcated in a manner analogous to other truths; demanding only from their more interesting import, proportionably higher degrees of care, attention, and assiduity in the promulgation of them. It is scarcely to be imagined, in these times, with what degree of false and malignant rancor, these plain, simple, and rational principles were attacked by the zealots and champions of the church. See Hoadly. On the meeting of the convocation, a committee was appointed to examine this famous publication, and a representation was quickly drawn up, in which a most heavy charge was passed upon it, as tending to subvert all government and discipline in the church of Christ; to reduce this kingdom to a state of anarchy and confusion; to impugn and impeach the royal supremacy in matters ecclesiastical, and the authority of the legislature to enforce obedience in matters of religion, by severe sanction. A sudden stop, however, was put to these disgraceful proceedings, by royal prorogation; and from that period the convocation has never been convened, but as a matter of mere form, and for the purpose of being again prorogued. The controversy which then commenced was carried on for several years, with great ability and animation on the part of the bishop, aided by various excellent pens, though opposed by men whose learning and talents gave an artificial lustre to bigotry and absurdity. No controversy, however, upon the whole, ever more fully and completely answered the purpose intended by it. The obscurity in which this subject had been long involved, was dissipated; the public mind was enlightened and convinced; church authority, the chimera vomiting flames, was destroyed; and the name of Hoadly will be transmitted from generation to generation, with increase of honor, of esteem, and grateful veneration.'

BANGUE, a species of opiate, much used throughout the east, for drowning cares and inspiring joy. By the Persians it is called beng; by the Arabs esscar, corruptly asseral, and assarth; by the Turks, bengitie, and vulgarly mastack; by European naturalists, bangue or bange. It is the leaf of a kind of wild hemp, growing in the countries of the Levant, and differs little, either as to the leaf or seed, from our hemp, except in size. Some have mistaken it for a species of Althæa. There are various manners of preparing it; Olearius describes the method used in Persia. Mr. Sale tells us, that, among the Arabs, the leaf is made into pills or conserves. But the most distinct account is given by Alexander Maurocordato, counsellor and physician of the Ottoman Porte, in a letter to Wedelius. According to this author, bangue is made of the leaves of wild hemp, dried in the shade, then ground to powder; put into a pot wherein butter has been kept; set in an oven till it begins to torrify; then taken out and pulverised again; thus to be used occasionally, as much at a time as will lie on the point of a knife. Such is the Turkish bangue. Bangue in reality, is a succedaneum to wine, and is therefore much used in those countries where Mahommedanism is established.

BANGUEY, an island in the eastern seas, lying off the north coast of Borneo, and separated by a channel, three miles wide, from the island of Balambangan. It is about twenty-three miles in length, by eleven in breadth, and its shores are frequented by abundance of turtle. Long. 117° 25′ E., lat. 7° 15′ N.

BANIAK, an island in the eastern seas, off the west coast of Sumatra, opposite to the mouth of the Sinkell. It is one of a cluster, and is about seventeen miles in length, by seven in average breadth. It is known by a peaked hill, resembling a sugar-loaf. Sea slug, or biche-de-mar is obtained here. The inhabitants are of the Maruwi race, but speak a language peculiar to themselves. Long. 96° 48′ E., lat. 2° 10′ N.

BANIALUCH, or BANJALUKA, a city of European Turkey, the capital of Bosnia, upon the frontier of Croatia, on the river Verbas. The houses, which amount to 3000, are meanly built, and the suburbs are chiefly inhabited by Greeks. Long. 18° 20′ E., lat. 44° 20′ N.

BANIAN DAYS, in marine language, a term among sailors, for those days in which they have no flesh meat. It seems to be derived from the practice of the people mentioned in the next article.

BANIANS is sometimes taken as a name for a religious sect in the empire of the Mogul, and sometimes extended to all the idolaters of India, as contradistinguished from the Mahommedans: in which sense, Banians include the Brahmins and other castes. At other times it is restrained to a peculiar caste or tribe of Indians, whose office or profession is trade and merchandise; in which sense Banians, signifying bankers, stand contradistinguished from Brahmins, Cuttery, and Wyse, the three other castes into which the Indians are divided. The four castes are absolutely separate as to occupation, relation, marriage, &c. though all of the same religion; which is more properly denominated the religion of the Brahmins, who make the ecclesiastical tribe, than of the Banians, who make the mercantile. The proper Banians are called, in the Shaster, or book of their law, by the name of Shuddery; under which are comprehended all who live after the manner of merchants, or that deal and transact for others, as brokers; exclusive of the mechanics or artificers, who make another caste. These Banians have no peculiar sect or religion, unless it be, that two of the eight general precepts given by their legislator, Bremaw, to the Indian nation, are, on account of the profession of the Banians, supposed more immediately to relate to them, viz. those which enjoin veracity in their words and dealings, and avoiding all practices of circumvention in buying and selling. Some of the Banians, quitting their profession, and retiring from the world, commence religious, assume a peculiar habit, and devote themselves more immediately to God, under the denomination of Vertea. These, though they do not hereby change their caste, are commonly reckoned as Brahmins of a more devout kind; as monks in the Romish church, though frequently not in orders, are reputed as a more sacred order than the regular clergy. Gemelli Carreri divides the Banians into twenty-two tribes, all distinct, and not allowed to marry with each other. Lord assures us they are divided into eighty-two castes or tribes, correspondent to the castes or divisions of the Brahmins or priests, under whose discipline they are, as to religious matters, though the generality of the Banians choose to be, under the direction of the two Brahmin tribes, the Vinhagranaugers and Vulnagranaugers. The Banians are represented as great factors, by whom most of the trade of India is managed; in this respect equal to the Jews and Armenians, and not behind either, in point of skill and experience, in whatever relates to commerce. Nothing is bought but by their mediation. They seem to claim a kind of jus divinum to the administration of the traffic of the nation, grounded on their sacred books, as the Brahmins do to that of religion. They are dispersed, for this purpose, through all parts of Asia, and abound in Persia, particularly at Ispahan and Gombroon, where many of them are extremely rich, yet were above acting as brokers. But it has been justly said by a late writer, that the name Banian was

y given by Europeans to almost all
; and that generally what we read of
culiar tenets, their abhorrence for meat,
n fact, the practise of all conscientious
.
AN TREE. See FICUS.
ICA, a town in the island of Hispaniola,
les south-east of Cape François. Also
e of a small river in the same island.
JAR MASSIN, or BAGNAR MESSIN, a
d district of Borneo, on a river of the
ame, which falls into the sea near the
extremity of the island. The district
s diamonds, gold dust, iron, canes, and
the last of which is its staple commo-
Gold is obtained here in bars, and the
is celebrated for the quality of its steel.
orts are slaves, birds' nests, nutmegs, and
shells, which are all re-exported from
The rajah, or sovereign, formerly re-
a place called Cagu-Tangie, or Cota-
but he directed a city to be built at
ra, whither he transferred his abode in
anging the name of Martapura to Bunire
. His power is considerable. A Dutch
cial establishment on the banks of the
the end of the village of Banjar Massin,
atas, consists of an octagonal fort, sur-
by palisades, with bastions towards the
le; it was built in 1709. They had, by a
treaty in 1648, compelled the king to
sh for their benefit the whole pepper
The king has, in return, been protected
Dutch from the unsettled predatory tribes
eighbourhood. In the beginning of the
nth century, an establishment was at-
here by the English East India Com-
ut the settlers were resolved to abandon
e. During the late war, however, the
fort was occupied by the British. The
Banjar Massin formerly stood eighteen
the river, but has been transferred six
wer down. It consists of about 300
Long. 114° 55′ E., lat. 3° S.
IASS, or PANAAS, anciently Cæsarea
, a village of Syria, near the source of a
hich has been commonly supposed to be
an. This stream rises near a remarkable
a rock, on the declivity of which are
ne ancient Greek inscriptions to Pan and
phs of the fountain. The vestiges of a
ng city are still to be seen; but there are
ins of the temple which Herod the Great
in honor of Augustus. The fort of
, built in the time of the caliphs, stands
ummit of a lofty mountain. Around is
able country, but panthers, bears, wolves,
enas, are numerous. There is also great
nce of game. Distant two leagues west
ke Phiala, or Birkel-el-Ram.
IER (Anthony), licentiate in laws, mem-
the academy of inscriptions and belles
and ecclesiastic of the diocese of Cler-
n Auvergne; died in November 1741,
. He is principally celebrated for his
ion of the Metamorphoses of Ovid, with
and explanations, which was published
, at Amsterdam, in folio, ornamented with
plates, by Picart; and reprinted at Paris, 1738, in 2 vols. 4to; and for his Mythology explained by History, a work full of the most important information, and printed at London in 1741, in 4 vols. 8vo.

BANILLIA, in the materia medica, a name used by some for the vanillia, or vanilloes, used in making the scented chocolate.

BANISERLIE, the capital of Dentila, in western Africa. It is a Mahommedan town.

BAN'ISH, BANISH'ER, BANISH'MENT, BAN'NITION. } See BAN. Sax. *forbaned* a banished nan. In Fr. *bannir*, Germ. *bunnen*, to put out of a community by a ban or civil interdict, which was formerly either ecclesiastical or civil. *Banishment*, *exile*, and *expulsion*, all include the idea of exclusion or coercive removal, but in other respects they differ. *Banishment* follows from a decree of justice; *exile*, either by the necessity of circumstances or an order of authority; *banishment* is a disgraceful punishment inflicted by tribunals upon delinquents; *exile* is a disgrace incurred without dishonor; *exile* removes us from our country; *banishment* drives us from it ignominiously. *Banishment* and *expulsion*, both mark a disgraceful and coercive exclusion. But *banishment* is authoritative, the public act of government; *expulsion* is the act of a private individual, or a small community. *Banishment* always supposes a removal to a distant spot, to another land; *expulsion* never reaches beyond a particular house or society. *Banishment* and *expulsion* are likewise used in a figurative sense, although *exile* is not: in this sense *banishment* marks a distant and entire removal; *expulsion* a violent removal; we *banish* that which it is not prudent to retain; we *expel* that which is noxious. Hopes are *banished* from the mind when every prospect of success has disappeared; fears are *banished* when they are altogether groundless; envy, hatred, and every evil passion should be *expelled* from the mind as disturbers of its peace; harmony and good-humor are best promoted by *banishing* from conversation all subjects of difference in religion and politics; good morals require that every unseemly word should be *expelled*.

> This is thy mortal foe, this is Arcite,
> That frō thy lond is *banished* on his hed,
> For which he hath deserved to be ded.
>
> *Chaucer.*

> Plato made it a great signe of an intemperate and corrupt commonwealth, where lawyers and physicians did abound; and the Romans distasted them so much that they were *banished* out of their city, as Pliny and Celsus relate, and for 600 years not admitted.
>
> *Burton's Anatomy of Melancholy.*

> Oh, fare thee well!
> Those evils thou repeat'st upon thyself
> Have *banish'd* me from Scotland. *Shakspeare.*

> Marius then fetching a deep sigh from his heart, gave him this answer, 'Thou shalt tell Sextilius, that thou hast seen Caius Marius, *banished* out of his country, sitting amongst the ruins of the city of Carthage.'
>
> *North. Plutarch.*

> They refused to do it (take the oaths), and were upon that condemned to perpetual *banishment*, as men that denied allegiance to the king, and by this an engine was found out to *banish* as many as they pleased. *Bishop Burnet's Own Times.*

As I have your express orders not to restore any person who has been sentenced to *bānishment*, either by myself or others; so I have no directions with respect to those, who having been *banished* by some of my predecessors in this government, have by them also been restored. *Melmoth's Pliny*

Every professor do continue in his office during life, unless in case of such misbehaviour as shall amount to *bannition* by the university statutes. *Blackstone's Commentaries.*

Thus I alone, where all my freedom grew,
In prison pine, with bondage and restraint;
And, with remembrance of the greater grief,
To *banish* the less, I find my chief relief.
Earl of Surrey.

Then came the autumne, all in yellow clad,
As though he joyed in his plentious store,
Laden with fruits that made him laugh, full glad
That he had *banisht* hunger, which to fore
Had by the belly oft him pinched sore;
Upon his head a wreath that was enrol'd
With ears of corne of every sort he bore,
And in his hand a sickle he did bolde,
To reap the ripen'd fruit the which the earth had yold.
Spenser's Faerie Queene.

If sweet content is *banish'd* from my soul,
Life grows a burthen and a weight of woe.
Gentleman.

Joy to that happy pair,
Whose hopes united *banish* our despair.
Marvell.

Banish business, *banish* sorrow,
To the gods belongs to-morrow. *Cowley.*

It is for wicked men only to dread God,
deavour to *banish* the thoughts of him ca
minds.

Successless all her soft caresses prove,
To *banish* from his breast his country's

BANISTER (John), a physician and
in the reign of queen Elizabeth, was edu
Oxford, where, says Anthony Wood, he
logic for a time; but afterwards applied
solely to physic and surgery. In 1573
the degree of M. B. and, obtaining a licer
the university to practise, settled at Nott
where he lived many years in great rep
wrote several medical treatises. His wo
collected and published in 1633, 4to.

BANISTER, the same with BALUSTER.

BANISTERIA, in botany, a genus
trigynia order, and decandria class of
ranking in the natural method under the
third order, tribilatæ. The calyx is q
partite, with nectarious pores on the ou
the base; the petals are roundish and ung
the seeds are three, with membranaceou
There are seven species, all natives o
countries, but possessing no remarkab
perties. An American and West Indian
containing twenty-four species, has been
and described in Cavanilles, 'Mona
classis dissertationes decem.'

BANK.

BANK', *v.* & *n.* Junius derives this word from the Dutch *bancke*, which signifies to beat, to strike, as the waves perpetually strike against the shores of the sea, and the current of the river presses against its sides. Skinner is content, as is Johnson, with the Ang.-Sax. *banc, tumulus.* Wachter has *banc*, a hill, mound, heap, and any eminence, or rising place. It is transferred, he adds, to all eminent or rising places for sitting or lying, as banks of oars were not on the same level in ancient ships, but seats raised above one another. It may thus be applied to any thing raised to confine a current of water; to any mound or elevation designed as a barrier to protect or defend from the incursions of warriors; or to facilitate the subjugation of forts and cities; and to the raised table or counter of merchants, traders, or money-changers. To *bank* is to confine or surround with *banks;* to throw up embankments. On the authority of Steevens, the commentator on Shakspeare, it has been suggested, that to *bank* may mean to sail along the *banks.*

They besieged him in Abel of Bethmaachah, and they cast up a *bank* against the city; and it stood in the trench. *Samuel.*

When it was day they knewe not the lande, but they spyed a certayne hauen with a *banke*, into which they were minded (if it were possible) to thrust in the ship. *Bible*, 1551.

Have I not heard these islanders shout out
'Vive le roy,' as I have *bank'd* their towns?
Shakspeare.

Have you not made an universal shout,
That Tyber trembled underneath his *bank?*

Richmond, in Devonshire, sent out a boat
Unto the shore, to ask those on the *banks*,
If they were his assistants.

How sweet the moon-light sleeps upon thi
Here will we sit, and let the sounds of musi
Creep in our ears; soft stillness, and the nig
Become the touches of sweet harmony.

That strain again, it had a dying fall;
O, it came o'er my ear like the sweet south
That breathes upon a *bank* of violets;
Stealing and giving odour.

Plac'd on their *banks* the lusty Trojans sw
Neptune's smooth face, and cleave the yieldi

Mean time the king with gifts a vessel sto
Supplies the *banks* with twenty chosen oars.

That *banks* of oars were not in the same pl
raised above one another, is evident from des
of ancient ships. *A*

A brook whose stream so great, so goo
Was lov'd, was honour'd as a flood;
Whose *banks* the Muses dwelt upon. C

'Tis happy when our streams of knowledge
To fill their *banks*, but not to overthrow.

O early lost! what tears the river shed
When the sad pomp along his banks wa

Amid the cliffs
And burning sands, that *bank* the shrubby

ks they are furnished with bees,
se murmur invites one to sleep,
ttos are shaded with trees,
my hills are white over with sheep.
m have met with a loss,
health do my fountains bestow,
ntains all bordered with moss,
re the hare-bells and violets grow.
Shenstone.

ourse of commerce and language was gra-
lished between the opposite *banks* of the
d after Dacia became an independent
n proved the firmest barrier of the empire
invasions of the savages of the north.
Gibbon.

ry *bank*, and under every shade,
nd youths, a thousand damsels play'd;
ntonly were tripping in a ring,
oft border of a gushing spring.
Sir William Jones.

g to Christianity, or to the want of it, that
the Nile, whose constantly renewed fer-
to be impaired by neglect, or destroyed
ges of war, serve only for the scene of a
archy, or for the supply of unceasing hos-
Paley.

v. & *n*.
n,
UPT, *v*., *n. s*., & *adj*.
UPTCY,
ROUT, *v*. & *n*.

A commercial application of the former word. In this sense, bank is a receptacle for
d to bank is to deposit money in such
Bankrupt is of more general appli-
ending to persons who are dealers in
odity, or who carry on any trade or
It is derived from the Fr. *banqueroute*,
I. *bancorotto*. It signifies one whose
able has been broken; that is, whose
ed his means of payment. The Bank-
accurately define this species of offence
une.

natheless I toke unto our dame,
wif at home, the same gold again
your *benche*, she wote it wel certain,
tain tokenes that I can hire tell. *Chaucer*.

e openly preached in the temple, he had
the *banker's* tables, and drieven oute of the
Sir Thomas More's Works.

athered together a power, neither in num-
hardiness contemptible; but in their for-
be feared, being *bankrupts*, and many of
Bacon.

Wherefore do you look
at poor and broken *bank'rupt* there?
Shakspeare. As you Like it.

The earl of Wiltshire hath the realm in
farm.
GHBY. The king's grown *bankrupt*, like a
broken man. *Id. Richard II.*

Dainty bits
rich the ribs, but *bankerout* the wits. *Id.*

e had rather think both moral and judi-
malice and deadly purpose, conspired to
tor Israelite, the seed of Abraham, run on
krout score, flattered with insufficient and
discharges.
Milton. Doctrine, &c. of Divorce.

lone, he pens a proclamation stout,
e of the *banker's bankerout*. *Marvell.*
ey of widows and orphans employ'd,
nkers quite broke. *Id.*

GONZ. There's the quintessence,
The soul and grand elixir of my wit,
For he (according to his noble nature)
Will not be known to want, though he do want,
And will be *bankrupted* so much the sooner,
And make the subject of our scorn and laughter.
Beaumont and Fletcher.

By powerful charms of gold and silver led,
The Lombard *bankers*, and the 'change to waste.
Dryden.

Whole droves of lenders crowd the *banker's* doors,
To call in money. *Id.*

In vain at court the *bankrupt* pleads his cause,
His thankless country leaves him to her laws.
Pope.

Or at some *banker's* desk, like many more,
Content to tell that two and two make four,
His name had stood in city annals fair,
And prudent dullness mark'd him for a may'r.
Churchill.

Here is again discovered the inhabitant of Cheapside, whose head cannot keep his poetry unmingled with trade. To hinder that intellectual *bankruptcy*, which he affects to fear, he will erect a *bank* for wit.
Johnson's Life of Blackmore.

By an act of insolvency all persons who are in too low a way of dealing to be *bankrupts*, or not in a mercantile state of life, are discharged from all suits and imprisonments, by delivering up all their estate and effects. *Blackstone.*

That *bankruptcy*, the very apprehension of which is one of the causes assigned for the fall of the monarchy, was the capital on which the French republic opened her traffic with the world. *Burke.*

Had every particular *banking* company always understood, and attended to its own particular interest, the circulation never could have been overstocked with paper money. *Smith's Wealth of Nations.*

1. BANK, BANKERS, BANKING. The term bank has two distinct significations; one in reference to commerce, implying a place of deposit or store-house; the other relating to geography and rural economy, implying an elevation of the earth, either natural or artificial; and either below or above the surface of the water, in rivers as well as in the ocean. It is further a technical term in law; the judges of the supreme court of law, when sitting in judgment collectively, are said to sit in bank, banque, or banco. See JURISPRUDENCE. It is also a military term, denoting an elevation of earth within the parapet of a fortification, generally between two and three feet high, or more, according to the height of the parapet; being about four feet and a half lower than the top of the parapet, three feet broad, ascended at intervals by steps, by which the garrison get up to fire on, or to observe the proceedings of, the besiegers.

2. We will now proceed in the endeavour to illustrate the term bank, in conjunction with bankers and banking, as referable to commerce, by showing, 1st, the probable origin or derivation of the term; 2nd, the origin or rise, and nature of banking institutions; 3rd, their progress, practice, and present state, throughout the commercial world; and 4th, their influence and effect on the social and moral relations, and condition of mankind.

3. Bank, in its present application as a commercial term, appears to have had its origin in

Italy, where, in the infancy of European commerce, the Jews were wont to assemble in the market-places of the principal cities and towns, seated on benches, ready to lend money; first on the reputation and written bond or acknowledgment, singly or jointly, of borrowers; but (as will be more fully shown hereafter), as there is in the lending and borrowing of money an immutable tendency to demoralise and derange society, confidence and reputation soon became mere byewords; and, instead of bonds and written obligations, money was only lent upon the security of commodity or produce, by which localised places of deposit or storing became necessary; and hence, banking, in its origin, bore an analogy to our present system of pawnbroking; while the term bank is supposed to have been derived from the benches and tables in the market-places, at which the money-lenders used to transact their business; the Italian word banco, signifying a bench, derived probably from the Greek word *τραπεζα*, signifying both a bench and a table, as does also the Spanish word banco; in reference to which the money-lenders obtained the name of benchers or bankers; the Jews of Lombardy being among the first people in Western Europe who carried into practice the principle of lending money on the security of commodity; their repositories partially obtained the name of Lombard-houses.

4. The Lombards were a Scandinavian tribe, who first figure in history about the year 378; but it was not till 568 that they established themselves in Italy; at which period they made Pavia the capital of their kingdom. It must have been, therefore, subsequent to this period that banking institutions assumed any thing like a permanent character. Lending and borrowing, however, appear to have prevailed in all ages, or long before the intervention of money, to facilitate the interchange of commodities; and in all ages, as in the present day, appears to have been productive of extortion and social derangement: see the Mosaic code, Exodus, ch. xxii. v. 14 and 22, and Deuteronomy, ch. xxiv, v. 6 and 10, and by the narrative of St. Matthew, ch. xxi, v. 12, it will be seen that tables in the market or public places were in use in his day, for the accommodation of money-lenders.

5. The restless disposition of the Lombards tended to excite a spirit of activity and enterprise throughout all the Italian states; by which the people of those countries became the merchants or distributors of the products of Asia over all the western and northern parts of Europe. It was towards the close of the seventh century, after the Mahommedans had obtained possession of Egypt, that the chief depôt of the products of the east was transferred from Alexandria to Constantinople, and afterwards to Venice, that commerce began to resolve itself into a more regular system than had ever before been practised, and a methodical and demonstrative order of keeping accounts was devised and adopted. See BOOK-KEEPING. This, in the progress of time, elicited new ideas on the economy of payment; and about the middle of the twelfth century the bank of Venice, so long celebrated throughout the commercial world, and which may be regarded as the foundation of the present s
banking, was established; and had the o
of the bank of Venice been confined to
timate object of facilitating commerci
change, its socialising capabilities wo
rendered it worthy of the celebrity it
enjoyed; but, whilst the principles of
nomy are entitled to the highest ad
it seems to have been established in
with a view to political aggrandiseme
throughout the whole course of its career
been perverted to the worst of purposes.

6. It was the desolating system of
sades, and not the socialising principle
tating commercial interchange, which ga
the bank of Venice. The first crusade e
from the shores of the Adriatic, under th
ces of Pope Urban the Second, in 10
from the ascendancy and influence w
Venetians, by their extensive commerci
course, had then acquired over every
Western Asia and Europe, they bec
principal agents of the crusaders, as we
wealthy individuals who embarked in th
valrous exploits as for the several gove
to which they respectively belonged. T
of extortion, so likely to result from su
tem, excited the cupidity and avarice
Venetian senate, which led, in 1176, som
1157, to the establishment of the bank
the authority and pretended guarante
state, the crusading agency previously
rested exclusively with individuals.

7. The original subscription fund of th
Venice was 2,000,000 Venetian ducats,
£433,333; but, by a solemn edict of th
the whole trading community of the
were compelled to deposit their mon
bank, with which a credit was opened eq
deposit made, which could only be ma
able for transfer, so that not only the su
capital but also the aggregate amount of
sits resolved themselves into a national d
whole amount of the intrinsic money, s
and deposited, having been applied b
nate towards aiding the views of the c
and other external purposes, an ideal
or mere denomination of amount
created to adjust the operations of co
interchange.

8. Whether the transfers at the ban
early period of its establishment requ
sonal attendance, as is the case in tra
the national debt-stock at the bank of
in the present day; or whether eff
written orders corresponding to the che
present English practice of banking;
appear: but, be that as it might, dera
in the social economy of the state soon
the agio or difference between the curr
and transferable amounts at the bank,
the rate of thirty per cent. Yet such
insidious and illusive nature of the ban
that the bank increased in popularity in
tion to the extent of the derangeme
ensued; the inconvenience frequently
in the minor transactions of commerc
as on occasions of citizens or strangers
money to defray the expenses of foreign

ɩɯrse of time to the bank paying out
t such was the influx of money,
usading armaments brought from all
stern Europe, that after the system
payments in money was practised,
always exceeded the demands.

ter period, when the Venetians them-
d crusaders against the Turks, the
-fund of the bank was increased to
f ducats; the whole of which was
by the senate, to aid them in their
f warfare; and, as previously stated,
he whole period of its career, it was
trument of aggression in aid of poli-
lisement: yet such was the fortuity
nces, and, for several centuries having
ts integrity does not appear ever to
questioned; the derangements occa-
he fluctuation of the agio led ulti-
n edict of the senate, fixing it at
cent., at which rate it continued up
l of the extinction of the republic in

ENICE.

e fourteenth century the Genoese
al the Venetians in their commerce,
a bank was established at Genoa;
e favorable local position of Venice
it an undiminished political impor-
although the Genoese were very
their commercial career, their bank,
that of Venice, was an insignificant
t; it nevertheless was enabled, in the
tury, to advance considerable sums
d other governments; but in 1751 it
insolvent to a very considerable
in 1798 the establishment was finally
d broken up by Buonaparte.

rther progress appears to have been
formation of banking institutions,
he discovery by the Portuguese, in
passage to Asia by the Cape of Good
even then, more than a century
ore another bank was established.
commencement of the seventeenth
en Amsterdam had become the chief
ropean commerce, that a bank was
n that city in 1609; and, as the cir-
which led to, and the conduct which
formation of this bank, appear to
urely commercial and social, void of
ive and political influence, and its
entially different from either those
London, it merits the most ample
f the details of its system on our
e utmost attention on the part of the
ader.

ing, in its economy, resolves itself
istinct orders of practice, viz. 1. of
sfer, and agency; 2. of discount,
l, 3. of discount and circulation: a
blishment may, therefore, be formed
on either any one of these orders of
arately, or two, or all collectively;
nd all of them are liable to be made
of oppression by partial application,
sion to impolitic and bad purposes:
le elucidation of the details of each
ractice will appear hereafter (see
the analysis being exhibited in this
I.

place, that the distinctive character of the bank of Amsterdam may be the better understood.

13. The circumstances which gave rise to the establishing of the bank of Amsterdam, were the great variety of clipped and debased coins which its extensive commerce, at the close of the sixteenth and commencement of the seventeenth century, brought into that city. The constant variations of value of these coins occasioned continual disputes and inconveniences in the adjustment of payments, more especially so in the payment of foreign bills of exchange; to obviate these disputes and inconveniences, it was, that the bank was established in 1607, on the legitimate and social principle of deposit, transfer, and agency; the security of the deposits being guaranteed by the corporation of the city, by whom its managers were appointed, and who thereby constituted themselves the agents of the establishment; the expenses of which, and its management, being defrayed by fees on opening of accounts, transfers, &c. This system or practice of banking, it will be seen, requires no subscribed or fixed capital.

14. The bank of Amsterdam received coins of all descriptions at a fixed value, according to their weight and fineness, deducting an amount equal to the expense of coinage into the standard coin of Holland; not that the various coins so paid in should be converted into standard coins, but that a credit should be placed on the bank books to such an amount, after the seignorage and fees had been deducted; the amount so credited then constituted bank-money. It was in the next place enacted, that all payments of 600 guilders, = to £52. 10s., in amount, and upwards, whether on internal or foreign account, should be made in bank money; and as these regulations immediately occasioned an agio or difference of value between bank-money and current money, it as immediately became compulsory on the part of every man of business either to open an account at the bank, or to subject himself to the caprice of a fluctuating agio, to enable him to make his payment through the medium of those who had an account.

15. The distinction between the practice of the bank of Amsterdam and the bank of Venice, is this, viz. That the bank of Venice appropriated its subscribed capital, as well as part of its deposits, to external purposes, and created an ideal sum by means of transfers to a corresponding amount, whereby to adjust the internal payments of the public; whilst the bank of Amsterdam retains its deposits within the walls of its own establishment; and when we come to treat of the practice of the bank of England, that will be found to present additional features of practice deserving the utmost possible attention, as well in reference to a comparison with the practice of the banks of Venice and of Amsterdam, as for the influence and effects of its own operations upon the general interests of the country at large.

16. In addition to the transactions of the bank of Amsterdam, as detailed in sect. 14, the bank also gives credit on its books upon deposits of gold and silver bullion, at the rate of five per cent. below the mint price of the bullion. In making these deposits, which are made more for

safe keeping, and the view of reserving them for articles of merchandise, than for conversion into coin, the bank grants a recipice, receipt, or warrant, entitling the holder to take out the bullion again at any time within six months, upon transferring to the bank an amount of bank money equal to that for which credit had been given in its books when the deposit was made, and upon paying one-fourth per cent. for the keeping, if the deposit was in silver, and one-half per cent. if it was in gold; the recipice expressing, that in default of such payment, upon the expiration of the term of six months, the benefit of the recipice becomes forfeited to the bank, while the amount credited against the deposit resolves into bank-money; leaving a profit to the bank proportionate to the difference between five per cent. below the mint price, and the value of the bullion in the market.

17. This species of deposits are, in the first instance, more generally made when the mercantile price of bullion is so far below the mint price as to become an article of speculation, and the profits to the bank upon this branch of its business are considerable, by the forfeiture of some of the recipices; but more particularly so from the frequent renewals. The creditors of the bank, in bank-money, and the holders of recipices, are regarded by the bank as two distinct classes of creditors: hence the creditor in bank-money, having no recipice, cannot draw out bullion without first going to market to buy a recipice, nor can the holder of a recipice draw out his bullion, in the event of his having sold the bank-money assigned to him on making the deposit, without first going into the market to repurchase bank money, and reassigning the same to the bank.

18. In a city of extensive and complicated commercial interchange, like Amsterdam, these regulations of the bank necessarily occasion continued demands for both bank-money and bullion, and gave rise to a system of jobbing and trick, precisely similar to the jobbing and tricking in time bargains upon the stock exchange in London; and at one period the agio was wont to fluctuate from eight to ten per cent. To keep it within certain bounds, however, the bank of Amsterdam resolved at all times to grant 100 of bank for 105 of current money; or rather to sell bank-money at an agio of 5 per cent. In consequence of this resolution, the agio was prevented ever exceeding that rate; and the fluctuation now seldom exceeds 2½ per cent. between 1½ and 4.

19. In addition to the seignorage deducted on first opening an account with the bank in money, see sect. 14, a fee of ten guilders, = to 17s. 6d., is also charged; and for every renewed account, 3 guilders 3 stivers; for every transfer, 5 stivers, = 2d. $\frac{1}{10}$ of a penny, and in order to discourage a multiplicity of small transactions, if the transfer is for less than 300 guilders, the charge is six stivers; for neglecting to balance accounts regularly twice a-year, a fine of twenty-five guilders is exacted; and in case of attempting to overdraw an account, a fine of 3 per cent. on the sum so attempted to be overdrawn is also levied, in addition to setting aside the order. These several fees, fines, and deductions for seignorage, together with the profits which occasionally arise by the sale of bank-money, to maintain an equilibrium in the agio, and the forfeiture of bullion recipices, produce a considerable revenue to the city, over and above what suffices to defray the expenses of the establishment. Public utility, however, and not revenue was the original, and up to this time, has continued the ruling object of the establishment, and the revenue derived from it is the natural result of its invariable rule of practice, which, whether the best that can be devised or not, its certainty and impartiality has obtained for it the sanction and confidence of all who have been concerned in it.

20. How far the system or practice of the bank of Amsterdam approximates to perfection or utility will more fully appear as we proceed to illustrate the various practices of banking in England, and in other parts of the world. The direction of the bank of Amsterdam is vested in four reigning burgo-masters (aldermen), who are changed every year. Each new set of burgomasters, on induction to their charge, are conducted to the bank, inspect the deposits, compare them with the books, and acknowledge the same upon oath, delivering it over at the end of the year with the same formal solemnity to the set which succeeds; and highly to the credit of the corporate body of the city of Amsterdam, both in its collective, and in its individual capacity, in reference to the direction of the bank, not only has no malversation been proved, but no imputation ever brought against them; nor have the political convulsions, by which Holland has at times been surrounded, and in which it has been involved, ever induced the bank to swerve from the strict rule of its established regulations; and such has ever been the confidence in the integrity of its director, that it has at times been the depositary of the money treasure of the opulent individuals of surrounding states.

21. Of the extent of the deposits of the bank of Amsterdam at different periods, the information is very imperfect; it may, at times, probably, have amounted to a sum equal to five, six, or seven millions sterling, and probably more, but on an average they probably have not, at past periods, nor do not at the present time, exceed three to four millions, or from forty to fifty millions of guilders.

22. As commerce extended itself over the north of Europe, banking institutions were established in different parts of Germany, but there were none that obtained any great celebrity, except those of Hamburgh and Nuremburg. That of Hamburgh was established in 1619, on principles, and for objects, not very dissimilar to those of Amsterdam, viz. those of deposit, transfer-agency and public utility. Instead of coin the deposits are made in silver bullion of a given fineness, against which credits are opened, either for transfer, or for withdrawing the bullion at pleasure, subject only to a trifling charge for deposit, or safe-keeping. The general practice of the bank of Hamburg is less formal, and more simple, than that of Amsterdam; and has been productive of great advantage to the city, and has maintained an unsullied integrity. The expenses of its management have been, and still continue to be, defrayed by fees, or transfers, &c. similar to those of Amsterdam. It was plundered of a considerable portion of its deposits by the

French general, Davoust, in 1813, a part of which were restored by the Bourbon government at the peace of 1815.

23. In 1635 the bank of Rotterdam was established, under regulations somewhat different in detail from those of either Amsterdam or Hamburg, but upon the principle of deposits, transfer, and agency.

24. About the sixth or seventh decenary of the seventeenth century, an individual of the name of Palmshut, in Stockholm, established a bank for the purposes of exchange, discount, and circulation; that is, he bought and sold bills of exchange, lent money at interest, and issued notes, which became a circulating medium, or token of interchange, for the amount they represented; naturally enough, although Palmshut originally possessed, relativelv, great resources, derangement and embarrassment soon overtook him, but inflated with his notions of ideal wealth, he applied to the king, Charles XI., whom he induced to become his patron in the formation of a royal bank, which, under Palmshut's directions, soon obtained a general confidence; and, in 1688, the direction was transferred to the assembly of the states of the kingdom, the king declaring himself, and his successors, protectors of the bank, but renouncing all interference in the disposal of the money. The states being thus declared guarantees, proprietors, and directors, under the regulations which they established, the bank became a bank of deposit, discount, and circulation. Depositors were allowed interest at the rate of 6 per cent.; and the deposits, together with notes of circulation, appropriated to discounts, on collateral securities, at the rate of 8 per cent. The king's revenues were also deposited at the bank free of interest. The institution immediately became popular, and all who had surplus money, in every part of the kingdom, poured it into the bank, so that, by the close of the century, the interest on deposits had been progressively reduced from 6 to 2 per cent., and on discounts from 8 to 3 per cent.

25. Like all institutions founded on speculative principles, the bank of Stockholm was soon destined to experience a reverse of fortune, and to become an instrument of political perversion. The chivalrous exploits of Charles XII. led to such a drain of the intrinsic resources of the bank, during the four years, 1714—1717, the period of the king's residence in Turkey, after the battle of Pultowa, and when the corrupt and profligate Goertz was minister of finance, that the revenues usually deposited with the bank, were unequal to discharge even the interest, much less contribute towards any repayments. This dilapidation of the resources, and credit of the bank, led to the mortgaging of other revenues of the crown, and a declaration on the part of the king, that no further drain should be made upon the bank until its resources and credit were fully restored: these measures produced a partial reaction in favor of the credit of the bank; but it proved only temporary, until an expedient of the minister Goertz unexpectedly diverted all the disposable wealth of the kingdom into the bank.

26 Whilst the declaration and resolve of the king to restore the resources and credit of the bank were adhered to, it deprived Goertz of the adequate funds to carry on his political intrigues, and to supply the king with sufficient means to maintain his regal importance; under these circumstances, he resorted first to fines and penalties, and ultimately to a species of confiscation, by demanding all the plate, jewels, and coin in the kingdom to be placed at his disposal, for which he gave copper tokens, representing ninety-six times the intrinsic value of the metal, (paper money in effect.) This measure led all those who possessed such disposable means to confide in the royal pledge, rather than yield to the exaction of Goertz. And they consequently in secret conveyed all their treasure to the bank. Goertz, chagrined at being thus disappointed, applied to the king and advised him to seize all the treasure deposited in the bank; but the king refused to comply, and prohibited Goertz from even making any proposal on the subject, contrary to the pledge which he had solemnly made.

27. This decision of the king reinstated confidence in, and fully re-established, the resources and credit of the bank, so that on the declaration of war against Russia, in 1741, the bank presented the king with a donation of 100,000 Swedish silver dollars, equal to about 7600, and supplied another 500,000 dollars, as a loan without interest, and subsequently to that period it frequently advanced considerable sums to the crown, and to the board of manufactures under the guarantee of the states.

28. The resources and credit of the bank being thus re-established, it was divided into two departments, *læne* and *wexel*, or loan, and exchange banks; the former corresponding in its practice with the practice originally established in Lombardy, (see sect. 3.) and precisely similar in principle to the practice of pawnbroking in England at the present day. Whilst the practice of the wexel or exchange bank, is that of deposit, discount, and circulation. The loan bank lends money on gold and silver bullion, copper, and its own stock, to their full value, at the rate of three per cent. and on three-fourths of the value of iron, at the same rate of interest; and on lands and houses at the rate of six per cent. four for interest, and two as a sinking fund, until the whole sum advanced is repaid. Jewels were at one time advanced upon, but the bank having once been defrauded to a considerable extent by them, resolved never again to make advances on those articles.

29. The wexel or exchange bank receives money on deposit, for which it allows two per cent. and issues notes, with which, together with its deposits, it discounts bills of exchange; this practice, which is the one originally pursued by Palmshut, (see sect. 24.) involves risk, and leads to certain loss; the issuing of notes, having no intrinsic value, sustains the loss as long as the notes retain confidence; but when that fails, derangement necessarily ensues, all this befell the wexel or exchange bank of Stockholm, within the short space of twenty-five years; and in 1766 the bank was on the verge of bankruptcy and final dissolution, when, by the interference of the

states, a loan of three millions of rix dollars, equal to about £700,000, was raised to liquidate the excess of notes in circulation; since the period of 1766 successive regulations have been resorted to, to preserve the credit of the bank, and a committee, composed of a certain number of persons from each of the three states of the kingdom, viz. the nobles, clergy and burghers, has been appointed, to inspect triennially the general state of the bank and its accounts.

30. Under the guardianship of the States, the wexel bank of Stockholm retains its place among the other institutions of the kingdom, but it has no importance externally, nor does the extent of its operations equal the operations of several private banking establishments in some of the provincial towns in England; it is the various kinds of practice of banking, however, and not the extent of the operations, which most demand attention; and on that ground it is, that the bank of Stockholm has here been enlarged upon, much beyond what the extent of its operations would otherwise have rendered necessary.

31. Bank of England.—We now come, in order of time, to treat of the bank of England; an establishment, whether considered with respect to the magnitude of its operations, or its influence upon the social relations of mankind, without a parallel in history; and from the period of its foundation, but more especially since the period of 1793, it has become so interwoven with the government, and the collective interests of the nation, as to render it difficult to treat of one, without entering largely into the details of the other. We will endeavour, however, to confine our elucidation of the bank, as far as it is connected with the government and the nation, as much as possible within the limits of those circumstances of the nation, in which the character and interests of the bank have been more immediately involved.

32. Although by its peculiar constitution, and terms of its charter, as well as in all the details of its practice, the bank of England appears to be an independent trading company, and although its operations combine all the various kinds of practice in banking (except the original one, of lending money on pledges,) viz. exchange, deposit, transfer, discount, agency, and circulation, and each and all of these, on a more extended scale than ever was, or perhaps ever will be, practised in any other establishment, it is, and ever has been, from its foundation, materially connected with all the financial operations of the government, and partakes therefore far more of a political than of a commercial character. This indeed has been considered by some writers and financiers an alarming excrescence on both our commercial and political systems. But we proceed to illustrate the progress of its career.

33. It appears to the writer of this paper that instead of desirableness and necessity dictating its origin, and instead of being founded like the bank of Amsterdam (see sect. 11) on the broad and social basis of public convenience and public utility, the origin of the bank of England was a mere project, which fortuitous circumstances alone have hitherto protected in an unexpected manner The original
projector of this memorable institution
Mr. W. Paterson, who, after numerous app
on the subject to the privy council,
succeeded in the the year 1693, in
its consent to the project, and an act,
6th William and Mary, c. 20, for gr
their Majesties several rates and duti
tonnage of ships and vessels, and upon
and other liquors, for securing certain
pences and advantages in the said act, m
to such persons as shall voluntarily adv
sum of £1,500,000 towards carrying on
against France! Section 19th of the
enacts that 'Their Majesties may make
sioners take subscriptions for £1,200,00
sum of £100,000 to be annually approp
the subscribers;' and by section 20th it
ther enacted that, 'Their Majesties may
rules for transferring, and make the subs
corporation by the name of 'The gover
company of the bank of England.''

34. Under the authority of the afore
subscriptions were immediately entered
before the 1st of Jan. 1694, the whole
subscribed, and on the 27th of July,
year, the charter of incorporation was e
its duration being limited to eleven y
from the 1st of August, 1694, to the 1st of
1705, after which date the corporation w
minable upon twelve months notice, an
ment of the £1,200,000 advanced. At
(1694), the rate of interest was 6 per
annum; but by the terms of the contrac
above £1,200,000, the corporation were t
8 per cent. per annum, and £4000 per an
management, or trouble of transferring
portioning the interest among the n
subscribers.

35. Such were the circumstances, a
the origin of the bank of England, n
which it will be seen bear any analog
circumstances and origin of the banks of
Amsterdam, Hamburgh, or Stockholm; b
we proceed further in exhibiting the pr
the bank of England, it may be well
what the state and practice of banking
land was, prior to the formation of that e
ment; and when the circulating mediu
country was exclusively metallic. At
period of England carrying on an exten
merce, when she received from Holl
Germany almost every species of manuf
exchange for grain and wool, and other
tions of the soil and mines, England
her loan banks, or Lombard houses, for
money on pledges (see sect. 3), hence th
logy of Lombard-street, in the vicinity
Royal Exchange, in London. At a mo
period the goldsmiths became the bank
merely as places of deposit or safe keep
afterwards for discount; and for mor
century prior to the establishment of the
England, and circulation of paper mo
goldsmiths held the same rank and im
in commerce, and exercised similar fun
the private bankers do at the present d
the establishment of the bank of Englan
merely divert the transactions of privat
and discount into new channels, but

seen, as we proceed, that it had the effect of changing the whole social economy of the state

36. The Bank of England being established, the charter directed that its management should be vested in a governor, deputy governor, and twenty-four directors, to be elected by the holders of the stock, a clear possession of £500 of which for six months constitutes a qualification to vote, the qualification of a director being the possession of £2000 of the stock, of a deputy governor, £3000 of do. and of a governor £4000 of do. So far as we have here described the transactions of the Bank of England, it seems confined to the mere raising of a loan of £1,200,000, for the use of government, at 8 per cent. per annum, and which was in fact, the foundation of the FUNDING SYSTEM, or NATIONAL DEBT; to prevent enlarging upon which here, see each of those subjects under their respective heads, and in conjunction with them see also CIRCULATING MEDIUM, EXCHANGE, BILLS OF, EXCHEQUER BILLS, MONEY, PAPER MONEY, and TALLIES. Of the nature and extent of the practice of the Bank of England, in deposit, transfer, discount, and circulation, during the early period of its establishment, but little seems to be known; and, indeed, for some time, its transactions seem to have been very much confined to trading in the government securities, and notes of its own circulation. At the Exchequer, then, as is still the case, accounts were kept by tallies, similar to accounts of bakers in those parts of the country where the weight of the loaf varies, and the money price remains fixed; notches are cut in a piece of stick, to denote so many loaves of bread, the stick is split, the buyer holding one part and the seller the other, so with the accounts of money at the Exchequer of enlightened England, at the period of establishing the Bank of England, and so the practice continued in 1826.

37. The first and second years after the establishment of the Bank, these Tallies were a trading and speculating commodity, as stock and exchequer bills are at the present day, and such was the state of the credit of the nation at that time that the tallies were at a discount of 20 to 40 per cent. against the sealed notes of the Bank, and the notes of the bank at a discount of 20 per cent. against the standard coin of the realm. With the view of equalising these disparities of value between the bank and national securities, and the standard coin of the realm, an act was passed in 1697, 8 and 9 Will. 3 cap. 20, empowering the Bank to receive subscriptions for the enlargement of their stock, four-fifths in tallies, and the remaining fifth in Bank notes. The amount of tallies ingrafted under this act was £1,001,171. 10*s*. subject, like the original subscription to an interest of 8 per cent. per annum, and the charter was extended to the 1st of Aug. 1710. In 1708, another act was passed, 7 Ann. cap. 7, under which the bank further lent the government the sum of £400,000 without interest; thereby reducing the interest on £1,600,000 to 6 per cent. The Bank at this time held Exchequer bills to the amount of £1,500,000, which, with an arrear of interest of £275,027. 17*s*. 10½*d*., were cancelled (funded) at the rate of 6 per cent. per annum. For these acts of condescension, the charter of the Bank was extended to Aug. 1, 1732, and the company authorised to take in subscriptions, to double their capital. In 1709 a call of 15, and in 1710 a further call of 10 per cent. was made, and in 1713 another act was passed, 12 Ann. cap. 11, extending the charter to Aug. 1, 1742, then, as before, determinable after twelve months notice, and repayment by the government, of all sums borrowed.

38. In 1717 another act was passed, 3 Geo. I. ch. 8, authorising the funding of a further amount of exchequer bills of £2,000,000, at five per cent. per annum; to which rate the interest on £1,775,027 was also reduced after midsummer 1718. In 1722, by another act, 8 Geo. I, cap. 21, the bank was authorised to purchase stock of the South Sea Company to the amount of £4,000,000, which stock bore an interest of five per cent. per an. but was reduced to four per cent. after midsummer 1729. To effect this purchase the capital was increased £3,400,000; and in 1727, pursuant to the act of 1 Geo. II, cap. 8, £1,000,000 of the £1,775,027. 17s. 10½d, funded in 1708, at six per cent, was paid off, and the interest on the £2,000,000, funded in 1717, reduced from five to four per cent. and under the authority of the same act; in 1728, £1,750,000 was further advanced to government at an interest of 4 per cent.; and, in the following year, pursuant to the act of 2 Geo. II, cap. 3, the remainder of the £1,775,027. 17s. 10½d. funded in 1708, together with £500,000 of the amount funded in 1717, was paid off by the government; who borrowed, under the authority of the said act, the sum of £1,250,000, at an interest of 4 per cent. per annum from midsummer 1729.

39. In 1738 another act was passed, 11 Geo. II, cap. 27, authorising the paying off a further portion of the bills funded in 1717, to the amount of £1,000,000; and in 1742, by the act of 15 Geo. II, cap. 13, £1,600,000 was advanced to government without interest, on condition of the bank being authorised to increase their capital stock, and the charter being extended to Aug. 1 1764. The capital stock was accordingly increased £840,004. 5s. 4d. The pretension set up in reference to this £1,600,000, was the reduction of the rate of interest on the original £1,200,000, and the £400,000 advanced in 1708; by the receipt of which latter sum the interest on the £1,600,000 was reduced to 6 per cent.; and, by the receipt of a corresponding sum without interest, it made the interest on the £3,200,000 equivalent to 3 per cent. But this seeming reduction in the rate of interest is a delusion; for, however anomalous it may at first seem, as the rate of interest progressively became reduced from 8 to 3 per cent, the pressure of the exaction on the people, as will clearly appear hereafter, progressively and virtually increased. So far, therefore, from the £1,600,000 being entitled to be regarded as a boon to the public, it appears to us as neither more nor less than a bribe to reconcile an unsuspecting people to an extension of the charter.

40. In 1746 another act was passed, 19 Geo. II, cap. 6, authorising the funding of exchequer bills, issued in anticipation of the tax on licences

for retailing spirituous liquors, to the amount of £986,800, at the rate of 4 per cent. per annum, and for authorising the bank to increase their capital stock 10 per cent. which was done in pursuance thereof. The total sum advanced by the bank to the government, now amounted to £11,686,800, and the capital on which the stockholders divided was £10,780,000. Of the amount advanced to government £3,200,000, (see preceding section) was at an interest of 3 per cent.; part of the bills funded in 1717 remained at 5 per cent. and the remainder at 4 per cent.; in reference to which, in 1749 an act was passed, 28 Geo. II, cap. 1, determining that from Christmas 1750 the interest on the whole £8,486,800 should be reduced to 3½ per cent., and from Christmas 1757 it should further be reduced to the same rate as the £3,200,000, viz. 3 per cent. Fifteen years now elapsed without any change in the terms of the charter, or accounts with the government, when in 1764, pursuant to the act of 4 Geo. III, cap. 25, the bank advanced £1,000,000 for two years without interest, and gave bonus to the exchequer of £110,000, for the extension of charter to the 1st of August 1786.

41. In 1781, pursuant to an act passed that the charter was further extended to the August 1812, and £862,400 more added t capital stock, in return for the loan of £2,00 for three years at 3 per cent.; and in 1800, suant to an act of 48 Geo. III, the charter wa ther extended to the 1st of August, 1833, on dition of advancing £3,000,000, for the servi the year 1800, on exchequer bills, to be disch without interest in 1806. Such was the sta the bank of England in 1800 in reference t permanent advances to the government and tent of its permanent capital, which we will briefly recapitulate. In the session of parliam 1822, an account of the total amount of debt to the bank of England, distinguishing fun from unfunded, the periods when contracted &c. &c. was laid before the house (paper 190), which, up to the period of 1746, will seen to correspond with the amounts previo enumerated, viz:

Anno.	Acts.		Amount.	
1694	5 W. & M. c. 20	Original Subscription	£1,200,000	
1697	8 & 9 Wm. c. 19	Ingrafted Tallies	1,001,171	
1708	7 Anne, c. 7	Exchequer-Bills cancelled . . .	1,775,028	
——	——	Advanced without interest . . .	400,000	
1717	3 Geo. I. c. 8	Exchequer-Bills cancelled . . .	2,000,000	
1722	8 —— c. 21	Transfer from South-Sea Company	4,000,000	
1728	1 Geo. II. c. 8	Advanced	1,750,000	
1729	2 —— c. 3	Ditto	1,250,000	
1742	15 —— c. 13	Ditto	1,600,000	
1746	19 —— c. 6	Exchequer-Bills cancelled . . .	986,800	
		Total Sum advanced . . .		£15,962,9
Paid off in				
1707		Ingrafted Tallies	£1,001,171	
1728		Part of £1,775,028	1,000,000	
1729		Remainder of ditto	775,028	
——		And part of £2,000,000 of 1717	500,000	
1738		Further part of £2,000,000 of 1717	1,000,000	
				4,276,19
		Nett amount of permanent Debt in 1746, and as it stood up to 1816		£11,686,8

42. In 1816 a further advance was made of £3,000,000; and in 1823 a contract was entered into for the bank to advance the government the sum of £13,089,419, in thirteen irregular instalments, between the 4th of April, 1823, and the 6th of July, 1828, in consideration of an annuity of £585,740 for 44 years, from the 10th of Oct. 1823. The first of these transactions resolves itself into a bonus to the bank equivalent to from £7,000,000 to £8,000,000; the latter being to a certain extent a contingent transaction, may prove disadvantageous to the public to the extent of from five to ten or fifteen millions, and under any circumstances that can possibly occur is equivalent to another bonus to the bank of at least £2,000,000. The first transaction is simple conclusive, and will be seen to involve mor well as pecuniary features, demanding the serious consideration of the public. The is one of the most complex and equi transactions which the whole history of B financiering, with all its profligacy and tortu exhibits since the commencement of wa 1793. A more circumstantial account of nature of both transactions will be found in order of time further on.

In the mean time, the following is a pitulation of the augmentations of capita which dividends were made to the propri of stock, viz.

Anno.		Augmentation.	Aggregate.
1694	Original Subscription	£1,200,000	£1,200,000
1697	Ingrafted Tallies	1,001,171	2,201,171
1708	Doubled	2,201,172	4,402,343
1709	Call of 15 per cent.	656,204	5,058,547
1710	Ditto of 10 per cent.	501,449	5,559,996
1722	Additional Subscriptions	3,400,000	8,959,996
1742	Ditto Ditto	840,004	9,800,000
1746	Call of 10 per Cent.	980,000	10,780,000
1781	Augmented	862,400	11,642,400

43. **And the following shows the rate and amount of dividends, per annum, at different periods, up to 1807, viz.**

Anno.	Rate per cent.			Amount annually divided.
1694—1696	3 years	8	(actual)	£96,000
1697—1707	11 ——	9	——	198,105
1708—1729	22 ——	9 to 5½	(estimated)	450,000
1730—1741	12 ——	6 & 5½	(actual)	520,200
1742—1746	5 ——	6 & 5½	——	563,000
1747—1752	6 ——	5	——	539,000
1753——	1 ——	4½ & 5	——	512,050
1754—1763	10 ——	4½	——	485,100
1764—1766	3 ——	5	——	539,000
1767—1780	14 ——	5½	——	592,900
1781—1787	7 ——	6	——	698,544
1788—1806	19 ——	7	——	814,968
1807—1815	9 ——	10	——	1,164,240
1816—1823	8 ——	—	——	1,455,300
1824—1826	3 ——	8	——	1,164,240

44. Thus, as stated in sect. 39, it is seen, that whilst the bank affects to lend the public its money at 3 per cent. per annum, the public, since 1807, have virtually been taxed at the rate of 10 per cent. to the extent of £1,164,240 per annum; nor is this all, for, by a return made to parliament in the session of 1819 (Paper, No. 347), in addition to the above exorbitant exaction, resulting from the illusive and peculiarly involved nature of the transactions of the government with the bank, it appears that the following sums were divided among the stock-holders as bonuses, viz.

Anno.		Amount.
June, 1799	10 per cent. on the £11,642,400 . . .	£1,164,240
May, 1801	5 ——— on ditto	582,120
Nov. 1802	2½ ——— on ditto	291,060
Oct. 1804	5 ——— on ditto	582,120
— 1805	5 ——— on ditto	582,120
— 1806	5 ——— on ditto	582,120
	Total as Bonus . . .	£3,783,780

And profuse as all this may seem in favor of the holders of bank-stock, and oppressive as it must be to the public, it sinks into comparative insignificance when compared with the transactions of 1816 and 1823, the nature of which shall be elucidated by and by; it seeming first desirable to take a retrospective view of the transactions of the bank, independent of its permanent advances and augmentation of its permanent capital.

45. By the stat. of 6 Anne, cap. 22, it was enacted, 'for securing the credit of the Bank of England, that no other banking company in England should consist of more than six persons, empowered to issue bills or notes payable on demand, or for any time less than six months.' And the act of 15 Geo. II. cap. 13, which extended the privileges of the charter to 1764, also enacted, that the acts of 7 and 12 Anne, and all all other acts for determining the corporation, should be void; and that the governor and company of the bank should remain a body corpo-

rate and politic for ever, subject to such restrictions and regulations as were contained in the acts and charters then in force, and by the same statute it was also further enacted, 'that persons forging, counterfeiting, or altering, any bank-note, bill of exchange, dividend, warrant, or any bond or obligation, under the company's seal, or any indorsement upon it, or knowingly uttering the same, shall suffer death, without benefit of clergy;' and further, 'that the company's servants breaking their trust to the company, shall also suffer death, as a felon, without benefit of clergy.' The same statute also further enacts, 'that when at a court of directors of the bank, neither the governor nor deputy shall attend in two hours after the time appointed for business, then any thirteen or more of the directors may choose a chairman for the time for the despatch of business, and that such court shall be as valid as if either the governor or deputy-governor had duly attended.'

46. As stated in sect. 36, the information is imperfect as to the extent of the transactions of the Bark of England in deposit, transfer, discount, and circulation, during the earlier period of its establishment; nor does it appear that the notes of the bank were ever at a discount against the standard coin of the realm after 1697, until 1798. In addition to the monies permanently advanced to the government, it was the practice of the bank to advance money in anticipation of the land and malt taxes; and to make other temporary advances on exchequer-bills and other floating securities; we have not been able to obtain any circumstantial account of the extent of these advances at an earlier date than 1777; from which period an account of advances by the bank to government on land, malt, exchequer-bills, and other securities, on the 25th of February on each of the twenty years preceding the 25th of February, 1797, was laid before parliament, vide Appendix, second Report of the Select Committee on the Expediency of the Bank resuming Cash Payments, 1819. Commons reprint, fol. 315, of which the following is a copy viz.

On the 25th Feb.	Land and Malt.	Exchequer-Bills.	Treasury-Bills.	Total.
1777	£4,912,000	£2,500,000	———	£7,412,000
1778	5,251,000	2,500,000	£2760	7,753,760
1779	5,682,000	2,769,000	15,664	8,466,664
1780	5,613,000	3,104,400	33,582	8,750,982
1781	5,517,000	262,230	49,541	8,188,841
1782	5,659,000	4,289,050	43,628	9,991,678
1783	4,962,000	4,662,200	4871	9,629,071
1784	3,901,000	3,641,000	23,853	7,565,853
1785	3,102,000	3,900,000	28,200	7,030,200
1786	2,307,000	4,303,200	24,672	6,634,872
1787	2,809,000	4,334,200	1696	7,144,896
1788	2,636,000	4,707,400	4299	7,347,699
1789	2,928,000	5,000,200	20,235	7,948,435
1790	2,882,000	5,006,500	20,468	7,908,968
1791	3,334,000	6,247,100	22,878	9,603,978
1792	2,802,000	6,636,600	26,999	*9,839,338
1793	2,698,000	5,939,600	52,359	9,066,698
1794	2,915,000	4,777,600	717,175	8,786,514
1795	4,291,000	4,329,000	2,117,491	11,114,230
1796	5,536,000	5,265,000	540,991	11,718,730

* The totals in each of the five last years include £376,739 lent out of the unclaimed dividends, without interest.

47. The earliest account of the amount of bank-notes in circulation which we have been able to obtain is the following, which was delivered to the House of Commons on the 18th of March, 1797, and exhibits the amount of notes in circulation on the 25th of February, in each of the ten years, 1787—1796, viz.

1787	£8,688,570
1788	9,370,350
1789	9,905,240
1790	10,217,360
1791	11,699,140
1792	11,349,810
1793	11,493,125
1794	10,699,520
1795	13,539,160
1796	11,030,110

As we are now approaching a most important period in the history of the transactions of the Bank of England, it will be well for the earnest enquirer after truth to bear in mind, that the notes in circulation up to the period of 1797, were convertible into gold on demand, at the rate of 77*s.* 10½*d.* per oz.; and when the above statement is compared with the preceding one, of the amount of the temporary advances to the government, and the following one, of the amount of cash and bullion in hand, and bills

, it will be seen that the issue of notes
have been regulated more in reference
unt of the temporary advances to the
it, than to the means of paying them
demand, as will be seen by the follow-
ent of the amount of cash and bullion
on hand, notes in circulation, bills discounted and advances to government, on an average in the months of March, June, September, and December, in each of the five years, 1793—1796, viz.

	Cash and Bullion on hand.	Bills Discounted.	Average of Notes in Circulation.	Average of Advanc to Government.
793				
	£3,508,000	£4,817,000	£11,963,820	£8,735,200
	4,412,000	5,128,000	12,100,650	9,434,000
nber	6,836,000	2,065,000	10,938,620	9,455,700
iber	7,720,000	1,976,000	10,967,310	8,887,500
794				
	8,608,000	2,908,000	11,159,720	8,494,100
	8,208,000	3,263,000	10,366,450	7,735,800
nber	8,096,000	2,000,000	10,343,940	6,779,800
iber	7,768,000	1,887,000	10,927,970	7,545,100
795				
	7,940,000	2,287,000	12,432,240	9,773,700
	7,356,000	3,485,000	10,912,280	10,879,700
nber	5,792,000	1,887,000	11,034,790	10,197,600
iber	4,000,000	3,109,000	11,608,670	10,683,100
796				
	2,972,000	2,820,000	10,824,150	11,351,000
	2,582,000	3,730,000	10,770,200	11,269,700
nber	2,532,000	3,352,000	9,720,440	9,901,100
iber	2,508,000	3,796,000	9,645,710	9,511,400
797				
ary 26	1,272,000	2,905,000	8,640,250	10,672,490

the above statement, it is seen, that
40,250 of notes in circulation on the
ebruary, 1797, £1,272,000 value of
remained in the bank, whilst the de-
gold continued daily to increase;
ch circumstances, on the 22d of Fe-
committee was appointed by the privy
investigate the affairs of the bank,
mmittee, on the 26th of the same
orted, that the total assets of the bank,
of the £11,686,800 permanent debt of
ment (see sect. 40, 41), was £17,597,298,
whole of the demands upon the bank
to only £13,770,390, leaving a clear
its favor of £3,826,903, exclusive of
nent debt due from the government.
report, the privy council instantly is-
rder prohibiting the directors of the
issuing any more cash (specie) in
until the sense of parliament on the
as obtained. From the statement of
90 being the amount of demands upon
and £8,640,250 being the amount of
irculation, as per statement in the pre-
tion, it appears that the demands of
and other creditors must have
to £5,130,140; and in like manner,
98 being the whole of the assets, and
90 thereof consisting of claims on the
nt, £2,905,000 in bills discounted, and
0 in specie, it leaves £2,727,808 to be
some specified items; including, no
e bank premises and probably some
other property in fief, in houses or lands, &c. &c. The transactions and state of the Bank of England, as detailed in this section, bring its history down to that eventful and important period when the peculiar nature of its connexion with the government first openly developes itself. To obtain a more comprehensive and distinct view of the subject, the reader will do well to refer to the journals and proceedings of parliament for the year 1797, and to examine the subject attentively, in relation to the nature and amount of the loans, and extent of the revenue and expenditure of the government at that period, as exhibited in Mr. Marshall's Statistical Illustrations of the Finances, Revenues, &c. &c. of the British Empire. See also the articles FUNDING, LOANS, SINKING FUND, and REVENUE, in the subsequent parts of this work.

49. It was on a Sunday evening that the order of the privy council, adverted to in the preceding section, was transmitted to the bank, and on Monday morning the following notice was published by the directors of that establishment, viz.

'*Bank of England, February* 27, 1797.

'In consequence of an order of his majesty's privy council, notified to the bank last night, copy of which is hereunto annexed,

'The governor, deputy-governor, and directors of the Bank of England, think it their duty to inform the proprietors of the bank-stock, as well as the public at large, that the general concerns of the bank are in the most affluent and flourish ing situation, and such as to preclude every doubt as to the security of its notes.

'The directors mean to continue their usual discount for the accommodation of the commercial interest, paying the amount in bank notes; and the dividend warrants will be paid in the same manner.

(Signed) 'FRANCIS MARTIN, Sec.'

50. The consternation of the public at this notification was extreme, but as a proof of the secret workings and illusive nature of the system, a meeting was held the same day at the mansion house, at which the lord mayor (Watson), presided, when the following resolution was unanimously agreed to, viz. 'That we the undersigned, being highly sensible how necessary the preservation of public credit is at this time, do most readily hereby declare, that we will not refuse to receive bank notes in payment of any sum of money to be paid to us; and we will use our utmost endeavours to make all our payments in the same manner.' This singular specimen of subserviency to speculative expediency was signed by the lord mayor and all present, and ultimately obtained upwards of 3000 signatures. We will not here enquire what portion of their names have since been exhibited on the bankrupt or other lists of insolvency; but we must regard the conseqences to have been the degradation of an alarming portion of the total population of the kingdom to the rank of paupers, with all the consecutive concomitants of demoralisation and crime.

51. On the same day (27th Feb.), a message was delivered from the king to both houses of parliament, to the following effect, viz. 'That an unusual demand of specie having been made from different parts of the country, on the metropolis, it had been found necessary to make an order of council to the directors of the bank, prohibiting the issuing of any cash in payment, till the sense of parliament could be taken on the subject.' In the upper house, Lord Grenville, who was then secretary of state for the foreign department, moved, 'That the communication from his Majesty should be taken into consideration the following day,' when in pursuance of the motion, after much circumlocution, Lord Grenville stated that he had two motions to submit to the consideration of their Lordships, first, 'That a humble address be presented to his Majesty, to return thanks for his gracious communication, and to assure his Majesty that he might rely with the utmost confidence on the wisdom of parliament, to call forth, in case of necessity, the extensive resources of the kingdom.' This was agreed to, nemine contradicente. The other motion was for 'The appointment of a select committee of nine lords, to examine and report on the outstanding debts against the bank, the state of the funds for discharging the same; the cause that rendered the order of council necessary, and which might justify the members of that house for taking the proper steps for the confirmation and continuance of that measure.' This motion gave rise to considerable discussion, in which the Duke of Bedford moved as an amendment, 'To leave out all that part which related to the committee reporting their opinion on the continuance of the measure.' In support of which amendment, the Marquis of Lansdowne said, 'That noble Lords would do him the justice to recollect, that not one session had passed over, since the fatal commencement of the war in 1793, in which he had not, to use a vulgar but strong expression, bored their Lordships with his prophetic admonitions, and proceeded to illustrate the nature of public credit, by saying, that it was to the people of Great Britain, what the soul of man was to his body. It was pure soul: it was immaterial in itself, and yet it was that which gave to substance its functions. It was not property, for no branch of the body could call it its own. It was not the king's credit, nor was it the credit of parliament; it was public credit, which did not look to security alone as its basis, but which always connected security with punctuality.'

52. The shock which had been given to public credit, the noble marquis stated, proceeded from deep, progressive, and accumulated causes; causes which all thinking, all honest men, had long deplored, and which had grown to a head under the unhappy and ill-requited confidence which had so fatally been placed in the king's ministers. In endeavouring to ascertain the causes that had brought on the dilemma, one cause was manifest; the inordinate increase of expenses, of places, and establishments, in every corner of the empire, which had grown to a height beyond every thing that the mind could previously have conceived; it was, said the noble marquis, incredible and scandalous; the increase of fees, of salaries, of places and pensions, of new boards of commission, and new appointments of all kinds, had not only served to open all the gates of waste and profusion, but to beat down and destroy all the checks of control, and all the means of correction. Waste and extravagance had been systematised; one scene of abuse countenanced and protected another, and all the corners of the earth were witnesses to the ruinous waste of the treasures of the British people. In this strain, with unabated ardor, did the noble marquis continue to depict the fatal consequences which must inevitably ensue from the continuance of such a system, and concluded a most patriotic appeal to the British parliament, by calling upon his compeers to mark his prophecy, and not to disdain his counsel, while yet in time, for said his Lordship, if you attempt to make bank notes a legal tender, then credit will perish. They may go on for a time, but their end is certain ruin. The earnestness and force of this appeal drew the Lord Chancellor from his seat, to state, 'That he had deprecated the idea of forcing bank paper into circulation, by making it a legal tender, and he would take upon himself to say, that it then had never been conceived, that it would be wise or prudent to make bank notes a legal tender. After which, their lordships divided on the amendment of the duke of Bedford; twelve for and seventy-eight against it. After which the original motion for a committee of enquiry was carried without a division,

53. Similar proceedings took place in the commons on the same day, where, in reply to

some observations by Mr. Fox, Mr. Pitt stated that perceiving some suspicions were entertained that the measure adopted for succouring public credit, was designed to be permanent, he assured the house, 'That nothing could be farther from his intention.' An amendment similar to that of the duke of Bedford, in the lords, was moved in the commons by Mr. Sheridan, which was rejected by 244 against eighty-six, when the original motion for a committee was carried without a division. On the 6th of March the lords' committee reported to the house that it was necessary to 'continue and confirm the measures already taken, for such time, and under such limitations and restrictions, and with such power of discontinuing the same, as to the wisdom of parliament might seem expedient.' And thus a system of paper money, without reference to any standard, either of value or quantity, was established, the duration and progress of which will appear, as the elucidation of the transactions of the bank is here further proceeded in.

54. On the re-assembling of parliament in November of the same year (1797), the committee of secresy, appointed to enquire into the expediency of continuing the restriction on the bank, reported, that the total assets of the bank, exclusive of the £11,686,800 of permanent debt due from the government on the 11th of November, was £21,418,640 (see sect. 48 for the amount on the 25th February preceding), and that the total amount of outstanding demands was £17,578,910, leaving a balance on that date in favor of the bank of £3,839,730. The report further stated that the advances of government had been reduced to £4,258,140, and that the cash and bullion in the bank had increased to nearly £6,500,000 or upwards, or five times its amount on the February preceding; all this being true, it will be seen that the discounts of commercial bills must have been increased in the proportion of about £8,000,000 against £2,905,000, the amount in February, but it will seem, on reflection, and on comparison with the advances to the government, as exhibited in the appendix at the conclusion of this article, that the whole report was a singular misrepresentation of the facts of the case, to answer the purposes of the moment; at all events, it will be seen that both the temporary advances to the government, and issue of notes, progressively increased from the close of the year 1797 up to the peace of Amiens in 1802-3, and the following statement exhibits the progress and duration of that restriction, which the Lord Chancellor in the Lords, and the finance minister in the Commons, so solemnly declared was to be only temporary.

55. The first act passed, relating to the subject was dated the 3d March, 1797, 37 Geo. III, cap. 28, authorising the issuing of notes for £1 and £2 each; the amount of such notes in circulation on the 26th August of that year was £934,015; for the progressive increase of their circulation see appendix.

ACTS RELATING TO RESTRICTION.

Year of Reign.	Date of Act.	Purport and Duration.
37 Geo. III. cap. 45.	3d May, 1797.	Indemnity for order in council, and to continue during the following month of June.
— — — 91.	22d June, —	Extended to one month after the meeting of the next session of parliament.
38 — — 1.	30th Nov. —	Further extended to one month after the ratification of a definitive treaty of peace, which took place on the 25th March, 1802.
42 — — 40.	30th April, 1802.	Further extended to 1st March, 1803.
43 — — 18.	28th Feb. 1803.	Still further, to six weeks after the meeting of the next session of parliament.
44 — — 1.	15th Dec. —	Again, to six months after the ratification of a definitive treaty of peace.

This brings the history of the restriction down to a most interesting and important period of its operation; so far, it is important to understand, that notwithstanding the introduction of paper as a circulating medium, gold at the rate of 77s. 10½d. per ounce continued to be the legal standard of value, and such was the incongruity of British legislation at this period, that whilst landlords and other creditors were authorised by law to enforce payment in gold, the acts previously enumerated precluded the gold from being had, wherewith either to pay rents, or make any other payments; such however was the insidious working of the system, that up to the period of 1809 no derangement in the social economy of the state, resulting from such incongruity of legislation was perceptible.

56. In 1800 foreign gold coin commanded about 5s. to 7s. per ounce more than its equivalent value to British coin; but the short peace of 1801-2 occasioned a cessation of demand, and the price again became merely nominal. From March, 1804, to October, 1805, standard gold sold at £4 per ounce; and from October, 1805, to February, 1809, no price was quoted; in the meantime, however, all the gold coin of the realm had gradually disappeared (for the quantity coined in each year since the restoration of Charles II. in 1663, see Statistical Illustrations, folio 47, and the article MINT in a subsequent part of this work), partly for internal purposes of manufacture and ornament, and partly in aid of the external purposes of the war; not directly and openly for that purpose but the excess of

bills drawn by the commissariat and other agents of the government, on account of the expenses of the war in different parts of the world, occasioned the bills to be drawn at a discount of 10 to 15 or 20 per cent. and at such depreciation, instead of being left to operate as mere extraneous equivalents of commercial exchange, they became an object of speculation against bullion, in reference to the standard price of gold in England.

57. To render the circumstances of this very interesting and important period of the bank restriction act somewhat more intelligible to such readers as are not practically familiar with the complicated involutions of exchanges, it may not be irrelevant to state (taking the mint of France as the means of illustration), that according to the mint regulations of England and France, twenty-five francs, twenty centimes in France are equal to £1 in England; but, in consequence of the excess of bills above adverted to, in May, 1809, the £1 English in France would not obtain more than twenty francs; consequently, as long as gold could be obtained in England at the mint price of 77s. 10½d. per ounce, it yielded a profit in France of upwards of 20 per cent. against that rate of exchange, but such a disparity of value, as might naturally be expected, excited a spirit of speculation and competition, which raised the price of gold to a premium equal to the discount on the bills. So that in May, 1809, gold commanded £4. 11s. per ounce; this disparity between the mint and trading price of gold excited an universal hubbub in every part of the country, and in February, 1810, a committee of parliament was appointed to enquire into the cause of the high price of bullion, and to take into consideration the state of the circulating medium, and of the exchanges between Great Britain and foreign parts. This committee sat from the 22d of February to the 25th of May, during which time it took the opinions of thirty different persons, whose trading transactions and influence were thought to be such as qualified them to throw much light on the subject; but whether ignorant of the combination of causes that did in reality produce the disparity of value, or whether selfish motives led them to conceal their better judgment, certain it is, that although much interesting matter-of-fact information is here and there interspersed through different parts of the evidence, as a whole, it is completely destitute of every thing like a solution to the question proposed. In proof of this conclusion see article EXCHANGE, in a subsequent part of this work; and in proof of the futility of the labors of the committee, and of the frivolousness of the evidence in a general sense, bullion continued gradually to advance, and the exchanges progressively to depreciate, until on the 18th September, 1812, gold commanded £5. 11s. per ounce.

58. Such an extreme disparity of value had previously excited every species of contrivance to collect gold, and was beginning to lead to such general derangements in the internal economy of the state, in selfish and avaricious individuals availing themselves of the point of law, which authorised them to demand and enforce payment in gold, in cases where by the nature of the obli-
gation, payment in current money
implied, that on the 24th July, 1811,
passed, 51 Geo. III. cap. 127, to make
of England notes a legal tender in all
which by the act of the 38 Geo. III. cap.
Nov. 1797), were only so in private tra
after having been accepted as such,
were ordered to be received as cash
collectors of taxes and duties. The ti
act for making the bank of England not
tender, in conjunction with a conside
the circumstances which led to it, is cu
deserves attention. It is as follows,
making a more effectual provision for
the current gold coin of the realm f
paid or accepted for a greater value
current value of such coin; and for
any note or bill of the governor and co
the bank of England from being receiv
smaller sum than the sum therein speci
for staying proceedings upon any d
tender of such notes.' To continue in
the 25th of March, 1812, and no longe

59. By another act in the followin
52 Geo. III. cap. 50. dated 5th May,
preceding act was extended to three mo
the commencement of the next session
ment, and no longer; and by 53 Geo.
5, 22d Dec. 1812, further extended
March, 1814; and by 54 Geo. III. ca
May, 1814, to as long as restriction
54 Geo. III. cap. 19, 18th July, 181
tion extended to 25th March, 1815; 55
cap. 28, 23d March, 1815, further ex
5th of July, 1816; 56 Geo. III. cap.
May, 1816, still further to 5th of J
58 Geo. III. cap. 37, 28th May, 1818,
5th of July, 1819; 59 Geo. III. ca
April, 1819, restriction extended in
59 Geo. III. cap. 49, 2d July, 1819,
limited to 1st of May, 1823; and in t
the bank empowered to exchange
quantities of not less than sixty ounce
notes, between the 1st of February a
October, 1820, at any rate between 81s.
6d. per ounce; and from the 1st of
1820, to the 1st of May, 1821, at an
tween 79s. 6d. and 77s. 10½d. per o
from the 1st of May, 1821, to 1st of M
at 77s. 10½d. per ounce; when gold
became a general circulating mediu
will be seen by the statement at the
of this article, the £1 and £2 not
bank of England were withdrawn f
lation, and to meet this change in the
medium in the years 1821 and 1822,
amount of £14,877,547 was coined at
Such is the history of the bank restr
which in February, 1797, was in both
parliament so solemnly declared to
temporary measure, but which continu
a period of twenty-six years.

60. Preparatory to returning again
circulating medium, a committee was
in each house of parliament, in 1819,
into the state and affairs of the bank,
ence to the expediency of the resump
payments, when, after taking the opini
thirty persons, the act of 2d July, 18

III. cap. 49. was resolved upon, and in the course of the enquiry on the 31st of March, 1819, the bank exhibited the following account of the state of their affairs, viz. 'That the whole of the claims upon them on that date amounted to £33,948,560, of which £24,710,770 was notes in circulation, and £9,237,790 in deposits and other debts, against which their assets in cash and bullion, bills discounted, and government securities, amounted to £39,179,750, leaving a balance in favor of the bank to the amount of £5,231,190, exclusive of the £11,686,800, permanent debt of the government, as exhibited in sect. 41, and £3,000,000 added in 1816.' Flattering as all this may seem on a superficial view of the subject, and confident as opinion generally was, of the country having escaped the peril, so earnestly warned of by Lord Lansdowne, in sect. 51, a short period only elapsed before the effects of the system, spectre-like, returned in a more terrific form than ever. Preparatory to the return to cash payments in 1823, through the years 1821 and 1822, the bank had progressively diminished the issue of its notes from an average of £22,550,000 in December, 1820, to an average of £16,393,000 in December, 1822; a depression in the money value of all the products of industry, without any parallel since the commencement of the war in 1793, followed this diminution of circulating medium. But the ordeal of the experiment of paying gold on demand having been got over, the cupidity of avarice again began to operate, and notwithstanding the accession to the circulating medium of the £14,877,547 of gold coined in the years 1821 and 1822, the bank again showed a disposition to force its notes into circulation, so far, that instead of gold supplying the place of paper for six weeks preceding the 5th of January, 1825, the bank of England notes in circulation again exceeded an average of £20,000,000; and those of country bankers had increased from £4,293,164 in 1822, to £6,724,069 in 1824, and £8,755,307 in 1825.

61. The facility of raising money among individuals, which this redundancy of circulating medium afforded, gave rise to an extent of speculation, far, very far, exceeding the notable South Sea and other adventures at the commencement of the preceding century. (See the article COMPANY, in a subsequent part of this work, for an elucidation of the extent and consequences of the folly at both periods.) Towards the month of September, however, the speculations generally began to be considered equivocal in their results; the first perceptible shock to what is technically termed credit, was experienced on the 24th of October, in the suspension of payment of one of the most eminent commercial establishments in London, or the commercial world (Mr. S. Williams, an American). After this, a month passed away in gloomy suspense, till on the 25th of November an extensive banking establishment at Plymouth (Sir W. Elford, Bart. and Co.) was the next evidence of the unsoundness and impolicy of the paper money system. This failure strengthened the doubts of the stability of others, and suspicion falling on all the banking establishments in the west of England, it produced in London such a demand for gold, as excited apprehensions for the consequences to which it might lead; in the meantime the bank of England had been progressively narrowing its issues, till the amount at the end of November was reduced again to £17,500,000. On the 9th of December the suspension of payment was announced of an extensive banking establishment at York (Messrs. Wentworth, Chaloner and Co.), having branches at three or four other towns in the county, and their own house of agency in London; consternation now became general, and the directors of the bank of England, who had, as we contend, contributed to bring on the derangement, by the facility which they afforded to get their notes into circulation, in discounting three and four months bills at 4 per cent. per annum, now as suddenly took steps which accelerated the derangement. On the 13th of December the following notice was issued, viz.:—

Bank of England.

'Resolved—That from and after the 13th instant, no bills or notes will be discounted under 5 per cent. per annum.'

62. This notification added considerably to the consternation: an extensive private banking establishment, deemed one of the most reputable in London, had previously suspended its payments, and on the following morning two others were reduced to the same alternative; it would be difficult, and at all events it would exceed due limits here, to describe the dismay and confusion that now prevailed; and with the view of endeavouring to allay the ferment, a public meeting at the Mansion House, as on the memorable 27th of February, 1797, took place on the 13th of December, 1825, when about 700 signatures were obtained to the following resolutions: viz.

'1. That the unprecedented embarrassments and difficulties under which the circulation of the country at present labors are mainly to be attributed to a general panic, for which there are no reasonable grounds; that this meeting has the fullest confidence in the means and substance of the banking establishments of the capital and the country, and they believe that the acting generally upon that confidence would relieve all those symptoms of distress which now show themselves in a shape so alarming to the timid, and so fatal to those who are forced to sacrifice their property to meet sudden demands upon them, which it is no imputation upon their judgment and prudence not to have expected.

'2. That it having been stated to this meeting, that the directors of the bank of England are occupied with the remedy for a state of things so extraordinary, this meeting will refrain from any interference with the measures of the directors of the bank, who, they are satisfied, will do their duty towards the public.

'3. That having the firmest confidence in the stability of the public credit of the country, we declare our determination to support it to the utmost of our power.

'4. That it is the opinion of the meeting that declarations of a similar description with the present, in the country towns, where the banking establishments may appear to deserve them, may be productive of much benefit in restoring general confidence.'

63. Although it was generally believed that the bank of England had been drained of nearly the whole of its stock of gold, during the memorable week between the 10th and 18th of December; yet on an average of the five weeks between the latter date and the 22d of January, 1826, the issue of bank of England notes had been increased to £25,310,000.; and that this lavish experimental issue did not lead to the necessity of again resorting to a restriction Act, was owing entirely to circumstances not at all contemplated in the deliberations which led to the increased issue of notes, and which, in fact, seem to have been issued with very little calculation on the consequences to which they might lead.

64. Notwithstanding the declaration at the Mansion House, on the 13th of December, that the embarrassments and difficulties under which the circulation of the country then labored, were mainly to be attributed to a general panic, for which there were no reasonable grounds; according to a return laid before the House of Commons on the 27th of February, 1826; in the interval of the end of October, 1825, and that date, fifty-nine banking establishments, comprising 144 partners, had been declared bankrupt, about twenty others insolvent, and every succeeding week continued to add from seventy to 100 merchants, manufacturers, and traders, to the bankrupt list, and thousands to the lists of insolvency; whilst half a million of families in the several manufacturing districts were driven to the verge of starvation, in consequence of the destruction of confidence, and suspension of commercial operations, which the uncertain issue and uncertain value of the circulating medium in great part occasioned.

65. Having now brought the history of the bank of England from the time of its foundation down to the period of this sheet going to press, in May, 1826, in reference to its circulation, we will now proceed to bring down its history from sect. 44, in reference to its agency and connexion with the government. Sect. 34 shows that it originated in the raising of a loan of £1,200,000 for the use of the government, at an interest of 8 per cent. per annum, and £4000 per annum for agency; and that that transaction was, in fact, the foundation of the funding system, which has led to an extent and pressure of taxation without any parallel in the history of society, and which the bank of England has been the main instrument in occasioning. Sect. 42 shows the progress of the advances made by the bank to the government up to 1781; which advances, in addition to the interest, were all subject to a charge for agency; as was also all other sums raised by lottery, or borrowed by the government from individuals during the war, from 1702 to 1713, the total sum then amounting to £52,145,363. The terms of agency up to 1726 had varied according to circumstances, at which time it was fixed at £360 per million, afterwards increased to £562. 10s. per million; after the peace of Versailles in 1782, when the total sum
amounted to £249,000,000, the terms
duced to £450 per million, at which r
tinued up to 1807, when it was reduce
per million, on £600,000,000., and
every million above that sum; during
tion of the property tax, the bank rece
rate of £1250 per million, on such p
the tax as were paid in to the bank
£805. 15*s*. 10*d*. per million on about £60
paid in on account of loans between
February, 1793, and the 5th of Janua
these several charges (including £4000
per annum for management of lotte
most of which charges are likely to co
all events up to the period of the conti
the charter in 1833, since the commen
the present century, have averaged about
per annum.

66. Independently of the above
agency, subject to specific charges, the
ceipt of taxes of Great Britain passe
the Bank of England, which, since 1
averaged upwards of £50,000,000 pe
upon this branch of its agency the ba
no direct charge, but as each separat
ment, paymaster, or accountant of th
ment, upwards of fifty in number, h
parate account at the bank, and each
provision for the progress of its pa
leaves a permanent balance in the han
bank of from four to seven millions pe
and during several of the last years o
from ten to fifteen millions per annu
following is a statement of the amount
the eight years 1818—1825 according
made annually to parliament, viz.

Years.	Maximum.	Minimum.	Ave the
1818	8,852,078	5,709,487	7,0
1820	5,861,631	2,246,598	3,7
1	7,096,874	2,302,591	3,9
2	7,690,046	2,867,851	4,1
3	8,305,174	3,698,764	5,5
4	10,359,773	5,000,127	7,2
5	9,239,024	3,197,190	5,3

67. By means of these balances, de
individuals, and the circulation of its n
the circulation of its notes, be it rem
creates the means of the balances an
sits), the bank discounts the bills
viduals, makes the temporary advance
vernment on interest, and buys exche
and other government securities, bearing
all these it is, in addition to the specif
of £275,000 per annum specified in sect
3 per cent. on the £14,686,800 spe
sect. 41, that enables the directors of the
divide the enormous amount of £1,45
annum among the holders of the £14,5
stock, as specified in sect.43. This p
vidend occasions the nominal £100 of
the bank books, to be saleable for tran
portionate to the current rate of inte
3, 4, or 5 per cent. per annum. Henc

Iay, 1816, £100 of stock commanded
d this leads us to an elucidation of the
on adverted to in sect. 42. In 1816 the
of the bank offered to lend the govern-
further sum of £3,000,000 during the
nce of their charter, at the moderate
interest of 3 per cent. per annum, the
rate then being about £4. 5s. per
nd such was the blindness, as the writer
aper regards it, of the government at
, that the Chancellor of the Exchequer
held it up in parliament as one of the
interested acts of kindness and genero-
public body that he had ever known:
eader should mark the sequel.

here was another proposition connected
transaction on the part of the directors
nk, to the following purport, viz. That
ld be empowered to add 25 per cent.
hen permanent capital of £11,453,330.
g complied with, what did the trans-
ount to? Certainly to empower the
ders of bank stock to levy a contribu-
om £7,000,000 to £8,000,000 on the
r their own exclusive benefit, because
ubscription was called for, nor was the
00 purported to be lent, the property
nk, but simply a reduction of the ba-
the public money, which the bank held
ent of the public; which by this act
empowered to convert either into a
le commodity at from £262 to £220 for
00, or to retain it as a permanent ac-
capital equivalent thereto.

other transaction between the bank and
nment, equally disadvantageous to the
ok place in 1823, act of 4 Geo. IV.
This act, which, under the title of Mili-
Naval Pension Bill, was virtually an
e money for the purpose of sustaining
fund, granted an annuity to the bank of £585,740 for forty-four years, from the 5th of April, 1823, in consideration of the bank paying to the government the sum of £13,089,419 in thirteen irregular instalments between the 5th of April, 1823, and the 5th of July, 1828. As the actual result of this transaction depends upon the rate or terms at which the £13,089,419 or a corresponding sum, may be expended in the purchase of 3 per cent. stock, prior to the payment of the last instalment, we are of course (in May, 1826) precluded from stating with accuracy the precise extent of its disadvantage to the public. But, according to one (the eighteenth) of a series of resolutions on the state of the nation, submitted to the consideration of parliament, by Mr. Hume, on the 4th of May, 1826, it appears that £6,917,569 of the amount received up to the 6th of January, 1826, had been expended at a rate equivalent to £7,858,188 of 3 per cent. stock, whilst the equivalent of 3 per cent. stock given for that portion of the amount was £9,476,110, consequently a bonus to the bank equal to £1,617,922 of 3 per cent. stock; but, by mathematically correct working of the transaction in 1824, when the 3 per cent. stock was at 95, and assuming that rate for the expenditure of the remainder of the instalments then to be paid, the result would have been on the 10th of October, 1828, a cancelling of perpetual annuity to the amount of £365,880, leaving an excess of £219,852 per annum, payable for 38½ years, equivalent to an annuity in perpetuity of £146,962; and supposing from the date of the last instalment in 1828, 3 per cent. stock should recede to 60, or the rate of interest become permanent at 5 per cent. per annum, the excess of the annuity of £219,852 for 38½ years, would, at the expiration of that period, be equal to £29,381,900 of 3 per cent. stock, or an annuity in perpetuity of £881,457, consequently a disadvantage to the public to that extent for ever.

ollowing is a Statement of the Income of the Bank at the period of this article going to press.

st on the £14,686,800 permanent Debt of the Government, at 3 per cent.		£440,604
ty for 44 years, from 5th of April, 1823		585,740
e for transfer of the Public Funds, and Payment of the Annuities, about		275,000
st on Notes in circulation, say £20,000,000, at an average of 4 per cent.		800,000
Total		£2,101,344
n which the following charges and liabilities must be deducted, viz.		
s of about 1000 Clerks	£250,000	
nary, Coals, Candles, and House Expenses	50,000	
r of Buildings, Taxes, &c.	20,000	
osition for Stamps	50,000	
n Bills Discounted	50,000	
Expenses, Gratuities, &c.	20,000	
		440,000
Net Income		£1,661,344

Being upwards of 11 per cent. on the amount of stock constituting the permanent capital annually divided upon, against which, however, £5,000,000 of the loan of 1823, for which the annuity of £585,740 was obtained, remains to be paid up; but, if the resources of the bank have hitherto been such as to enable it to advance the £8,000,000 without entrenching more than 2 per cent. upon its profuse income, but little doubt remains that it will be able to fulfil the contract without any further entrenchment, and if so, the whole annuity then remains clear income for the remainder of the period, viz. 38½ years. The amounts deducted from the gross income are entirely assumed, there being no authentic data before the public on the subject; they probably exceed the actual expenses.

71. In the preceding view of the total income of the bank, no notice is taken of interest on the temporary advances to the government, nor of profits by discounting, nor of interest that may be derived from the balances held by the bank, due as well to depositors as to the government; because the first, that is, the temporary advances to the government wholly, and the others partially, merge in the aggregate amount of interest derived from the circulation of its notes.

72. Since 1826, when the preceding part of this article was written, great and important changes in the practice and principles of Banking in England have taken place, the particulars and consequences of which, we will now proceed to elucidate. The expiration of the Charter of the Bank of England in the present Year, [1833] occasioned, in 1832, a committee of parliament to be appointed "to inquire into the *expediency* of renewing the Charter, and into the system on which Banks of issue in England and Wales are conducted, &c. &c." The committee, which was composed of thirty-two members of the House of Commons (five a quorum), called before them twenty-two individuals, considered to be practically well informed men, to whom, collectively, 5978 questions were put, whose answers fill 480 printed pages of large foolscap, upon which evidence the committee reported, "That on all the points into which they were appointed to inquire, more or less information will be found in the minutes of evidence, but on no one of them is it so complete as to justify the committee in giving a decided opinion." Many of the questions apply to the effect which the Foreign Exchanges have upon the price of Gold, and their consequent influence on the internal circulating medium; an elucidation of these subjects belongs to the articles *Circulating medium*, or *Currency*, and *Exchanges*, rather than to Banking; they are, however, so intimately connected with it as to render a reference to them necessary to a complete elucidation thereof: we shall, therefore, hereafter again refer to them in continuation of the present article. Inapplicable as many of the questions put by the committee were, and insufficient and unsatisfactory as its labors have been, as far as the question of a developement of the just principles of Currency and Banking is concerned, there are several accounts annexed to the evidence that contain information of the most important kind, and from which many just conclusions may be drawn; all of the most interesting and material of these accounts will be found exhibited in four statements at the conclusion of this article, and they will be adverted to in detail as we proceed in the further elucidation of the subject.

73. Independent of the Bank of England, which constitutes so prominent and important an adjunct to the great trading transactions of the Metropolis, there are also at this time [1833] about sixty other Banking establishments of deposit, discount, and agency in the Metropolis, and about 650 others in different parts of Great Britain, which are also banks of issue, as well as of deposit and agency. Previous to 1797, while all notes payable on demand were convertible into gold at the standard price of £3. 17*s*. 10½d. per. oz, or into silver at 5*s*. 2*d*. the oz., the practice of most of the provincial or country bankers was, to issue notes of £5 and £10 each, and partially of £20, £30, and £50 payable on demand, at some one of the most accredited of the sixty-five to seventy banking establishments in the metropolis. These notes it was the practice to advance, on interest, to the trading and agricultural producers of their respective districts; but as these notes, being payable on demand, were, within a week of their being issued, even from the most distant part of the country, liable to be presented for payment, the issuer was, in all cases, required to deposit with his agent in the metropolis an adequate sum as security for their amount, as well as being provided to pay them on demand at the place from whence issued; whereby it appears that two protecting capitals are required to keep one in circulation; and hence the difficulty, on a partial view of the subject, of discovering how the advantage to the issuer of the notes arises. This will be explained by supposing the total amount of promissory notes issued by any one country banker to be £20,000; a protecting capital of £5000 in the Metropolis, and £1000 or £2000 at the place of issue, will suffice; the interest upon the difference will be profit, less the expence of stamps, paper, and management; three-fourths of the amount issued, on an average, keeping permanently in circulation or dormant in the drawers of the traders and farmers; but, independent of the profit derived from circulation, some country bankers charge a commission of one-fourth per cent. upon all accounts which are allowed to be occasionally overdrawn; and to such of his connexions who become his creditors he generally allows interest only at the rate of two or three per cent. per annum, while he charges all his debtors four or five per cent., or some such difference. The great epoch, however, of advantage to the provincial banker commenced with the suspension of cash payments in 1797, when notes under £5 were allowed by law to be issued; the small notes, chiefly of £1, sometimes of £2, were generally payable only at the place where issued, and consequently required no protecting capital in the metropolis, or elsewhere, to sustain them; their circulation was maintained entirely by the credit and character of the party issuing them. Columns number

of the Statement number IV.,
the estimated annual amount of
nk notes in circulation, about three-
amount being in notes of £1 and £2,
he number of establishments licensed
same.

nent in cash being suspended (see sec-
til six months after the ratification of
treaty of peace, the small note circu-
ved its first check after the peace of
14; but re-attained its wonted vigour
817-18, see columns 3 and 4 of
V. From the close of the latter year,
turn to gold payments at the standard
as determined upon, the small note
experienced a second check, from
ffort was made to recover it in 1822-3,
year 1825, in consequence of cir-
detailed in sections 60 and 64,
lation was entirely prohibited, the
England having voluntarily with-
r small notes in 1821. • Up to the
826, the practice of provincial Bank-
land and Wales had been carried on
by individuals, or by partnerships
three; and here and there, but
ally, of four or five members; but
dit which fell upon individual
nkers in 1825-6, as detailed in sec-
four, and the disinclination of many
ny accommodation on credit, has led
date to the formation of Joint Stock
Establishments, at each of the under-
places, viz.—

ol.
ster, 2.
ster and
pool, 9.
ham, 1.
ampton.
l.
y.
l.

field.
orough.

York.
Darlington.
Lancaster, 3.
Whitehaven.
Carlisle 7.
Leicester.
Norwich, 9.
Stamford & Spalding.
Gloucester.
Langport, 14.
Plymouth and
Devonport.

following certain of the places denote
r of branches respectively established
nks. The Bank of England has also
branches at each of the eleven fol-
aces, viz.—Liverpool, Manchester,
mingham, Bristol, Gloucester, Swan-
, Norwich, Hull, and Newcastle.

Scotland there are about thirty-five
tablishments, all, except three, issuing
and £2, as well as for larger amounts.
ercial banking company of Scotland,
rgh, has thirty-one branches; the
e British linen company, twenty-seven
and the bank of Scotland, sixteen;
en other establishments have together
branches, so that altogether there is in
etween 160 and 170 offices of discount,
nd agency. Of these about fifteen
garded as private establishments, and
nder joint stock partnerships; their
of promissory notes amount to about
0, in the proportion of three-fifths of
. In Ireland, subsequent to its union
with Great Britain in 1801, banking establishments became numerous, increasing during the war to sixty or seventy; but, on the return to payment in gold in 1823, about ten only remained solvent and in practice. In 1783, the Bank of Ireland was established with a capital of £600,000, afterwards increased to £3,000,000, with exclusive privileges, corresponding with those of the Bank of England; the circulation of the Bank of Ireland, on an average of five years preceding 1826, amounted to about £5,000,000, in the proportion of about one-third of small notes under £5; and the circulation of all the other banks at the same time amounted to about £1,200,000. In 1825, a company was formed in London with a subscribed capital of £2,000,000, under the title of the "Provincial Banking Company of Ireland," which has established branches at eighteen of the principal towns in that country, at a greater distance than fifty miles from Dublin, within which limits it was precluded by the privileges of the Bank of Ireland from issuing of notes. The provincial Bank of Ireland, as well as all the banks of Scotland, like the country banks of England and Wales, charge a commission on all the amounts which pass through their hands, and allow and charge interest in like manner.

76. In the three preceding sections we have exhibited, in brief outline, the nature and extent of the provincial banks of issue in the three several parts of the United Kingdom, preparatory to showing the way in which they are connected with the transactions of the metropolis. To the American reader of our work to whom the practice of banking (in a way to which we shall hereafter advert) is so familiar, it may be interesting to know that, not only does the whole receipt of revenue of the United Kingdom pass through the metropolis for redistribution, but that the payments of all the great transactions of the kingdom are also there equalized or balanced; this general concentration of the whole money transactions of the kingdom, gives to the private banking establishments of the metropolis, a character peculiar to themselves; they neither issue notes, nor, on the transactions of the metropolis, do they charge any commission, yet several of them employ from forty to sixty clerks, while their contingent expences are on a proportionate scale. Since 1824, eleven of these establishments have suspended their payments, and the greater number of them proved great defaulters; at the present time (1833) there are fifty-nine in operation, of which, thirty-five are located within two or three minutes' distance of the Bank of England and Royal Exchange, ten in the more western part of the city, and the remainder in Westminster. The transactions of ten of those located contiguous to the Bank of England are on a very extended scale, and among whom the agency of the country banks is principally divided; the transactions of ten or twelve others may be regarded as inconsiderable, and each of the remainder as giving employment to from fifteen to twenty-five clerks.

77. The private banking establishments of the metropolis are formed of two, three, or more partners, in very few instances exceeding five;

the requisite qualifications, either for commencing a new banking establishment or for being admitted a partner in an existing one, are, 1st. a money property of from £30,000 to £50,000, 2nd. prudential habits, and 3rd. a general good moral character. The practice of the metropolis being for every merchant, trader, and professional practitioner to deposit his daily or weekly receipts of money with some one of the banking establishments, the total number of depositors probably amount to about 30,000; this gives an average of about 500 accounts to each bank, supposing them equally divided; upon these deposits no interest is given, nor, on the other hand, is any commission charged on their being withdrawn; but, as many deposits thus made form collectively a large sum, the banker obtains his advantage by using it in the discounting of bills, it being understood between the depositor and the banker that, as a compensation for managing his account, the depositor will keep a permanent balance with his banker of £200, £500, or £5,000, as the case may be, according to the nature and extent of his transactions: thus, supposing a banker to have only 500 accounts, and the standing deposit of each to average only £500, this would afford a discounting capital to the banker of £250,000; this will serve as an example, but the deposits in each of about twenty of the principal establishments will probably average five or ten times that sum.

78. It is not what may be considered the permanent balance of the deposits, which alone constitutes the means of advantage to the economical banker. The respectable merchant and trader does not confine his balance to a specific sum; but he provides by anticipation for his payments some days previous to their being due, and at other times his receipts come in without any immediate demands being made upon him: all these contingencies tend to augment the banker's balances, and means of discount; and thus a thousand sums, which remaining in the hands of individuals would be useless, by being concentrated in banks of deposit become available for being made constantly active and profitable. It was with these deposits so concentrated that the Exchequer bills exhibited in col. 13 of statement III. were kept in circulation; during the war from 1793 to 1816 those bills carried an interest of 3*d.* to 3½*d.* per £100 per day, and, by being daily convertible, they enabled the metropolitan banker at all times to convert his depositors' balances to a profit; but, since the termination of the war, the interest on those bills has been progressively reduced to 1½*d.* per £100 per day, and at that reduced rate they command a premium of from 5*s.* to 35*s.* per £100, which renders them of very precarious advantage as absorbents of temporary balances, and confines the application of the deposits more exclusively to the discounting of bills of exchange. Previous to 1825, with the exception of the government account and that of the East India Company, the transactions of the Bank of England, as a bank of deposit, were comparatively inconsiderable; but, in consequence of the devastations at the close of that year, as detailed in sect. 64, when six of the private bank-
ing houses of the metropolis were
the general wreck; the distrust th
sioned led to the transfer of a number
from the private bankers to the Bank
as may be seen by the increase of
exhibited in col. 7 of statement IV.

79. It having been shown that the
rived from the deposits is the onl
emolument of the private bankers of
polis upon the metropolitan part of
actions, if the extent of the de
ascertained, their aggregate emolume
pretty accurately determined; but,
sence of all authentic data, the best
done here is to assume some basis
approximation to the amount may
at; the expenses of about fifteen of t
establishments, ten in the city and fi
minster, will approximate to £8000
each, in clerks' salaries, rent, taxes,
gencies; of thirty others about £50
the remaining fifteen about £2000 eac
a total of £300,000 per annum; if
add £2000 per annum each, as the
penses of 240 principals, being an
four partners to each establishment,
per annum more is required to me
penses, making together a total of £7
meet this amount, at the present pre
of interest, deposits to the amoun
£25,000,000 are required, and to be
employed, leaving nothing for defal
such like contingencies; £25,000,0
among sixty establishments, gives an
£416,600; when a second-rate establi
been suspended in its operations the
it have run from £300,000 to £40
with from ten to fifteen of the princ
the deposits will doubtless amount to
or £1,500,000, and the aggregate p
proximates to £30,000,000, in the foll
portions, viz. with the

15 principal establishments		£1,20
30 second class	do.	30
15 minor	do.	15

These give a total of £29,250,000,
30,000 depositors, in the following
viz.

1000	averaging	£5000	each	£
1000	do.	3000		3
4000	do.	2000		8
4000	do.	1000		4
10,000	do.	750		7
5000	do.	200		1
5000	do.	150		
30,000		£975		£2

80. As all what are termed firs
that is, bills of unquestionable valid
the last four or five years been dis
the rate of 3, to 3¼, or, as an extre
per cent. per annum, £30,000,00
£5,000,000 as a necessary rest or
meet daily contingencies (to which w
advert), will barely provide for the
penses, in addition to which the
penses of several of the individual
engaged in banking are stated to
£20,000 per annum, and a number

5000 each; and, at the present
rsonal expenses of the collective
ne of the principal establishments
amount to £80,000 per annum,
es at the commencement of the war
re inconsiderable, not exceeding
e profits of another establishment,
well understood, for two or three
s to the termination of the war, ex-
000 per annum, while the personal
he principal partner did not exceed
num; but from 1798 down to 1819,
the emoluments derived from the
deposits, the emoluments derived
cy of the country banks, as exhi-
4 of statement IV., was very consi-
equal probably to that derived from
tan deposits. The emoluments of
ankers by the agencies of the banks
, Manchester, and Leeds, are sup-
ne time, to have amounted to a
rable sum, and that one of the
establishments alone is stated to
ual to £10,000. It will not be out
to state that the practice of the
iverpool and Manchester was and
ception to the practice of all the
ial banks; those of Liverpool and
never having been banks of issue,
ely of agency, charging ¼ per cent.
nsactions: the nature of their prac-
ke the bills drawn and received in
the produce and manufactures sold
ctive places, and supply the mer-
anufacturers with Bank of England
sh for their current demands; in ad-
ich the bills so drawn in themselves
important feature in the circulation
ict of the kingdom; and, as the
eculiar to the district, and is as in-
important as it is peculiar, it me-
n an ordinary share of attention from
e as well as general inquirer, not
mparison with the practice in other
t Britain, but as having no compa-
e circulation and practice of banking
part of the world; we shall therefore
show its extent and practice.
imports into Liverpool, including
Ireland, have averaged, during the
ears, about £20,000,000 per annum;
al value of the manufactures of the
hich Manchester is the centre have
ut £50,000,000 per annum; for, al-
quantity has doubled during the
eduction in value has been in a ratio
g as near as possible with the in-
ntity. Upon these transactions but
nparatively speaking, are created in
while about £35,000,000 on London
n Manchester, in the proportion of
0,000 for the proportion of cottons
orted, and £18,000,000 for the con-
d re-distribution of the metropolis;
g £15,000,000 are paid for by other
n or remitted by the country shop-
per.) Hence bills, as here described,
nt of about £50,000,000, annually
the hands of the Manchester bankers, at present (1833) eight in number. In Liverpool the prevailing condition of all contracts is 'payment in *approved bills*, not exceeding three or four months' date;' then, as the bulk of the imports into Liverpool are worked up or consumed in the district; the cotton dealer, or spinner, the grocer, provision dealer, &c. obtain from their bankers in Manchester such portion of the bills previously mentioned as their transactions require; hence it will be seen that these bills constitute the chief circulating medium or means of exchange between the place of import and distribution. The remainder of the bills created and received in Manchester are in due course remitted to the metropolis, in exchange for such foreign produce and productions thereof as are supplied from thence into Lancashire; and then, as all the produce imported into Liverpool is drawn for at the places of export in bills payable in London, all the bills carried into Liverpool from the Manchester district are ultimately remitted to the metropolis, to meet the payment of the bills so drawn, on account of the imports; and, as the bills made payable in London are generally addressed to some accredited banking house, the remittances from Liverpool are commonly made through the banking houses of that place.

82. By the preceding section it will be seen that the practice of the Liverpool and Manchester bankers consists more of endorsing and rendering valid, or *approved*, the bills created and received for the manufactures of the district than in receiving and disbursing of cash deposits, and that it is consequently a practice requiring the utmost discretion and judgment, and differing essentially from the practice of the metropolis. The risks and liabilities of the Liverpool and Manchester bankers are exceedingly involved, inasmuch as their transactions are not confined to the bare passing through their hands the £50,000,000 per annum which the manufactures of the district give rise to, but they exchange bills of large amount for smaller, and *vice versa*, as the wants and conveniences of their connexions require; and, although these transactions do not add to the aggregate liability, they add to their complication. The practice of the bankers of Leeds, of Sheffield, of Birmingham, and of all the other manufacturing districts, as well as of the provincial banks in general, is similar to that of the bankers of Liverpool and Manchester, in regard to their endorsing and exchanging of bills, but differed from them in their practice, during the small note circulation, of issuing their own promissory notes to supply the current cash demands of their respective districts, which their £5 and £10 notes at present in part supply; but, as in the case of Liverpool and Manchester, the bills created in all the other manufacturing districts are all drawn upon or made payable in the metropolis, they consequently give rise to daily exchanges between about thirty-five of the metropolitan bankers to an extent incredible to persons unacquainted in some degree with the practice of banking transactions.

83. The aggregate transactions of the metropolitan bankers, exclusive of the Bank of

England, are stated to amount to from £3,000,000 to £4,000,000 daily, and occasionally to exceed the latter sum. The economical means devised for the daily liquidation and settlement of the claims of the bankers upon each other is the nearest approximation to perfection in social arrangement ever arrived at: some of the principal Westminster establishments have accounts with those in the city in a way not dissimilar to the provincial bankers; then, about thirty of the principal houses each send a clerk to a common rendezvous, where they exchange the claims of their respective houses upon each other. The place where this exchange takes place is in Lombard Street, in the immediate vicinity of all the principal banking houses, and is termed the *Clearing House;* the first meeting takes place at one, and the last at four o'clock in the day; and by this arrangement claims of millions are settled in an hour, with a very inconsiderable sum. To the uninitiated it may be proper still further to explain that when the merchant or trader of the metropolis accepts a bill h accepts it payable at his bankers; and manner, in making cash payments, the *cheque*, or *order*, on their banker, the same time write across it the nam banker to whom it will be paid, which serves at once as a receipt on one side curity on the other, because, when s upon or crossed, in the event of being injury can accrue to either party, inas the crossing implies that it must *Clearing House*, and therefore prevents paid to any undue person. It must b stood, however, that the payment in c not usually made for amounts less tha one time the Bank of England would n recognize cheques of less than £10, a houses of business make it a rule not for a less sum; but this depends entirel cumstances, and occasionally, as an exce the general rule, a cheque may be giv small an amount as 30*s.* or even 25*s.*

84. The following statement will suffice to show the way in which the daily transacti those bankers who associate at the *Clearing House* are equalized:

	A	B	C	D	E	F	G	H
	£	£	£	£	£	£	£	£
A claims of		9,872	3,841	2,850	17,640	11,652	16,827	19,764
B do.	12,682		7,641	4,627	23,219	9,760	26,541	18,322
C do.	4,640	7,157		1,520	8,617	4,215	8,427	7,380
D do.	3,157	5,117	942		5,183	2,970	4,185	3,768
E do.	16,970	27,689	9,180	3,922		7,680	32,817	15,870
F do.	12,827	13,891	3,814	1,815	9,723		11,614	7,682
G do.	17,954	23,814	9,716	13,817	29,740	17,952		13,876
H do.	21,690	14,872	9,427	4,640	14,834	9,167	13,740	
To receive	89,920	102,412	44,561	33,191	108,956	63,396	114,151	86,662
Claimed of A		12,682	4,640	3,157	16,970	12,827	17,954	21,690
do. B	9,872		7,157	5,117	27,689	13,891	23,814	14,872
do. C	3,841	7,641		942	9,180	3,814	9,716	9,427
do. D	2,850	4 627	1,520		3,922	1,815	13,817	4,640
do. E	17,640	23,219	8,617	5,183		9,723	29,740	14,834
do. F	11,652	9,760	4,215	2,970	7,680		17,952	9,167
do. G	16,827	26,541	8,427	4,185	32,817	11,614		13,740
do. H	19,764	18,322	7,380	3,768	15,870	7,682	13,876	
To pay .	82,446	102,792	41,956	25,322	114,128	61,366	126,869	88,370
Balances .								
To pay .	7,474		2,605	7,869		2,030		
To receive		380			5,172		12,718	1,708

85. Suppose the letters A to H here to represent so many banking concerns. The lines of the first division of the statement show the amounts which each respectively claims, or has to receive, of the other, and the columns the amounts which each has respectively to pay; while in the second division the amounts are reversed, viz. the lines show the amounts claimed, and the columns the amounts which each has to receive of the other. The total amount carried in is £643,249, which amount, without some such mutual arrangement, would have to be paid in money twice over. It is true an exchan take place at the counters of the r houses, and the balances only paid or but this would be attended with grea time and considerable payments, while arrangement adopted, no money pa necessary if the bankers have confidenc other; because, with the exception of an very large amount, the *balance notes* give would probably equalize themselves so that if each banker was to deposit E bills for mutual security, according to

spective transactions and probable oc- alances at the clearing house, their might continue, *ad infinitum*, without of money ever being required, and the f the metropolis resolve itself, by this nto a joint stock security, with the su- antage resulting from individual con- while a daily account, made up in the chibited above, would show the work- money transactions of the metropolis, to enable just and important conclu- e drawn from them.

cording to the previous statement the balance arising out of an exchange of is £19,978, or about 3 per cent.; this, does not show the extent of money re- equalize each day's transaction, as will y the account of B, which in the ag- alances within the trifling sum of £380, , when exhibited in detail, shows a ba- 9,471, viz.

claims. £	Claimed of B. £	B has to receive. £	B has to pay. £
2,682	9,872	2810	
7,641	7,157	484	
4,627	5,117		490
3,219	27,689		4470
9,760	13,891		4131
6,541	23,814	2727	
8,322	14,872	3450	
2,792	102,412	9471	9091
	Balance to receive		380

be seen by these statements that, how- ular the claims of the respective bank- e on each other, in the aggregate the to be received or paid exactly cor- with each other, and thereby it may be advantageously the use of money may nised by mutual arrangement; and it h arrangements that the half-yearly of the dividends in January and July, ount of £8,000,000, are effected with 000,000 of money, as may be seen by ent No. 1 of the weekly circulation of s, at p. 474*. To make this more in- to the uninitiated it may be proper to at the National Debt department of of England an order, termed a *war-* iven for the amount of the dividend, rrant is convertible into money on de- another department of the Bank; but warrant is received by such persons as ing accounts, it is not converted into it carried to their banker, and it then the general exchange with the Bank d at the *Clearing House*, or in account respective private bankers, and thus iderable sum with which the payment ,000 in amount is half-yearly effected. ving thus far traced the progress of n Europe, from the earliest period of e, and shown its nature and extent in d Kingdom at the present time, before we proceed to show its nature and extent in France and America, we will offer a few observations on the prevailing excitement in England in regard to its expected future practice. That it is destined to an important change is certain, from more than one cause: the expiration of the charter, and the present ascendancy of the Bank of England, with its claim of about £33,000,000 on the government, coupled with the imaginary difficulties and certainly prevailing extensive distress of the nation, strong prepossession in favor of joint stock banks, and vulgar prejudice against private banks, are all circumstances which imply that an important change must take place. It is not, however, the question of banking, so much as of currency, that claims consideration; whether the energies of the people shall be bound in chains, and fettered with logs of gold, or whether some means as elastic as their energies shall be applied, that those energies may produce their proper force and effect, is still more immediately the question which ought soon to be decided; and without stopping to show the relative advantage or disadvantage of national, compared with joint stock or private, banks, we will first proceed to show the basis upon which the currency, or circulating medium of the country, now ought to be founded: this, however, unavoidably leads us to refer to the account commonly called the National Debt, but which term is a solecism, inasmuch as it is quite as much a credit, as it is a debt.

88. It will be seen, on reference to col. 2, of statement II. p. 476*, that on an average of seven years preceding the war declared against France in February 1793, the expenditure of the government did not amount to £18,000,000, including the charges of collection of the revenue, from which amount it progressively increased to upwards of £130,000,000, in 1815, more than seven-fold; the revenue, however, was increased only from £18,000,000 to £71,000,000, or about four-fold, the difference being effected, first, by the creation of bills, as shown in col. 13, of statement III., then funding them, and by the raising of loans, as shown in col. 3, of statement II. The most remarkable feature displayed in statement II. is, that during the first five years of the war, while the expenditure was increased from £18,000,000 to £50,000,000, no increase of taxation, comparatively speaking, took place; but when the operations of the war had absorbed the £18,000,000 value of gold, which had been coined during the eight previous years (see col. 14), and placed the country in a situation the most peculiar, a paper circulation was resorted to (see cols. 4, 5, of statement II., col. 3 of No. IV., and sect. 73); then it was, for the first time, shown what society, when unfettered, is capable of; it enabled England to advance her revenue with increasing facility from less than £20,000,000 to more than £70,000,000 per annum, in the course of eighteen years, and not only to contend single-handed for the supremacy of the world, but to advance at the same time all the means of social enjoyment in a corresponding degree; and, in 1815, to attain the object for which she had for twenty-three years contended,

not exhausted of, or diminished in, her resources, but, on the contrary, surrounded by an extent of scientific and mechanical power, a facility of interchange, and a moral force, without a parallel in the history of human action.

89. But what is the situation of the country now? (1833) An accursed delusion in respect to gold, like an ignis fatuus, has dazzled the understandings of men, and, with one or two alternations, led to eighteen years of prostration as deplorable as the previous eighteen years of advancement is even now delightful to look back upon. This declaration will doubtless induce the sciolist to exclaim, Oh! here's a paper money advocate for you! Simpletons, who do not seem to know the distinction between use and abuse, or, at all events, if they do know it, seem never to have entertained it. We will therefore show the distinction; but we must previously show the state of the annuity account, called the National Debt, in 1793, compared with its amount at the present time, and the state of the account between the Bank of England and the Government at the same two periods; and we shall then, in our development of an entirely new principle of currency, clearly show the distinction between the use and abuse of a paper circulating medium. The amount of government annuities, at the commencement of the war in 1793, was £9,200,000, reduced by the extinction of certain life and other terminable annuities, and by redemption of land tax, &c. to about £7,200,000; the total amount now payable being £28,340,000, leaves £21,140,000 created since 1792. Now, on reference to the statement of loans raised, and bills issued and funded, cols. 3 and 13 of statements II. and III. it will be seen that every pound of these annuities was created, not for gold received, but for paper; and for paper, if convertible at all into gold, a great part of it was at the rate of £5. 7*s.* to £5. 11*s.* per ounce. Mark, then, the injustice, as well as the folly, of endeavouring to enforce the payment of these annuities, as well as all other proportionally increased amounts, in gold at the fixed rate of 77*s.* 10½*d.* per ounce. Next, with regard to the Bank of England, sect. 42 shows the progressive increase of the subscribed capital of the Bank, from its foundation in 1694 down to 1781, at which sum it remained fixed down to the close of the war in 1815; the two following sections show the rate of dividends and amount of bonusses derived therefrom, during the same period, and down to the present time (1833); sect. 67 shows that an augmentation of £3,000,000 to the capital took place in 1816; and col. 8, of statement III., shows the amount of a further sum of between £18,000,000 and £19,000,000, which the Bank now claims of the Government, making together a total claim, as stated in sect. 87, of about £33,000,000. The amount advanced, as explained in sect. 69, is included in the amount exhibited in col. 8.

90. The total nominal value of the annuities, or, in other words, the capital of the National Debt, as it stood at the commencement of the present year (1833), was £755,000,000, for £24,100,000 of the annuities, the remainder being life and other terminable annuities, except about £650,000 for interest on the
Bills, as exhibited in col. 13, of sta
The £755,000,000 of capital above s
under twenty or more denominatio
and 4 per cents., distinctions as un
they are elusive; therefore, prepara
adoption of the measure we are ab
pose, it is necessary that all the vari
tions of stock should be consolidat
denomination, a measure as desirabl
sake, as it is in reference to the pro
are about to advance; in reference to
desirable that they should be conve
into a 3 per cent. stock; that bein
amount of the account will somew
£800,000,000, which account is now
gold, to be made the basis of the circ
dium of the country. Suggestions ha
quently and repeatedly offered for liq
National Debt, by converting it int
but the suggestions have invariably
and irrational, bespeaking an entire d
all knowledge of the exact relation
debt or of currency with the aggre
bined interests of the nation. In th
the extinction, or even diminution,
is neither necessary nor desirable;
otherwise, there is no means of e
guishing or reducing it without
diminution of power in the body pol
loss of a leg or an arm to the bod
from the manner in which it has gro
become an essential and indispensabl
aggregate combination; and, if it ca
considered a grievance, it is more th
sated for by the scientific and mecha
now in operation, which the funding
mainly been the means of creating.

91. The £800,000,000 nominal
annuities being made the basis of th
to make the currency invariable,
value of the annuities must be made
and this is to be effected by mea
simple, and as important to the
terests of the nation as they will
fectual for the purpose of affordin
riable currency. The government h
must be the only manufacturers
rency in £1 and £2 notes, as well
amounts; £100 of such notes to be
changeable for £100 of the consolid
and, *vice versa*, the stock in like ma
exchangable for £100 of notes. The
rate of interest being 5 per cent., th
between 3 and 5 per cent. will be t
profit to the bankers and agents of
By the adoption of such a measure
any other metal or commodity, will
of value as an article of merchand
energies of the country will be at
from the golden fetters with which
iron or lead) they have for eighteen
bound. This measure being resolv
first step to be taken, after the con
the stock, will be to provide notes f
cants, and then settle the claim of
with the Bank of England. The
that establishment, doubtless, imag
are entitled to claim £33,000,000

77*s.* 10½*d.* per ounce; but £11,642,400 is all they are entitled to receive in gold, all beyond that amount has been created in paper, and in paper only ought it to be paid; let, then, the claim of the Bank be settled by paying the subscribed capital back in gold, at the rate at which it was received, and the remainder in the national paper proposed as the only future circulating medium of the country, which gold and paper would form the future capital of the Bank of England.

92. Under the arrangement proposed in the preceding section all obligation between the Government and the Bank is dissolved; the Bank stands on its own bottom, with means and in a condition to pursue the occupation of bankers, like any other establishment, with the difference in their favor of a larger capital; if they should prefer funding their notes, or any part of them, let them do so: another establishment upon an equal scale of efficiency would doubtless be formed; the government business is open to the existing establishment, or to any other which may be formed; in either case it will be the duty of the government to take care that it is transacted on the most economical terms for the public; by economical we do not mean the lowest rate of terms, but those which afford the greatest security and facility. As the proposed currency is totally unconnected with gold, the £11,642,400, which the Bank will be entitled to receive at 77*s.* 10½*d.* per ounce, in its settlement with the government, will be at the disposal of the Bank as merchandize, like any other metal; should a demand ensue either to facilitate the transfer of capital from British to foreign security, or for procuring corn or any other article of production, the price of gold will rise in proportion to the demand for it, and a due equilibrium be thereby maintained. If it should be imagined that our silver currency may be exposed to derangement, by circulating in conjunction with paper, we do not apprehend an inconvenience as likely to arise; but, as it is a possible case, it may not here be irrelevant to state that the present attainment in the arts affords a substitute even for silver, more beautiful and equally convenient, whether in sixpences, shillings, half crowns, or crowns, and at the same time as non-intrinsic or valueless as the notes, except for their legitimate purpose of currency.

93. We have stated in a previous section that the present prevailing rate of interest does not exceed 3 to 3½ per cent.; it may therefore be supposed that, if the government rate of interest is fixed permanently at 3 per cent., there will be no inducement for bankers to risk the circulation of national notes; but the very circumstance of the government being always open to receive the surplus money capital at that rate, in itself would tend to enhance the rate for trading purposes; while the increased energies which a rational and compatible system of currency would tend to excite, and the progressively increasing consumption which would necessarily ensue, would enable 5 per cent. interest per annum to be readily paid on all money borrowed for manufacturing and trading purposes. A currency based as we have here proposed, on the capital of the national annuities, would not merely suffice for all purposes of internal interchange far more conveniently and preferably than gold, but it is susceptible of such an order of management as to serve at all times as an indicator of the activities and condition of the country.

94. The present circulation of the United Kingdom may be stated as follows: viz.

Bank of England notes about	18,000,000
Country Banks:	
England and Wales . .	7,500,000
Scotland	3,500,000
Ireland	5,000,000
Gold	26,000,000
Total . . .	£60,000,000

Exclusive of about £7,000,000 of silver, the circulation of which would not at present be altered by the adoption of the measure we have here proposed. The total of gold coined since the termination of the war in 1815, up to this time (1833), amounts to about £50,000,000; but the large transfers of capital from British to foreign securities, which took place more particularly in 1817-18, and more or less since that date, have led to the export of about £20,000,000 of gold, and three to five millions more has probably been absorbed for manufacturing purposes; the proportion left for the purposes of circulation may therefore be estimated as stated above, and £60,000,000 as the aggregate amount of circulating medium; but it does not circulate, and hence the embarrassment which so extensively pervades the productive interests of the empire. It will be seen by col. 10, of statement III., that from £7,000,000 to £10,000,000 of gold is constantly dormant in the coffers of the Bank of England; £3,000,000 to £5,000,000 more will in like manner be dormant in the drawers of the other bankers of the kingdom; while an equal amount of the Bank of England notes will be dormant in the hands of the private bankers of the metropolis, to meet sudden and unexpected demands; so that in reality the proportion of active circulating medium is less than £40,000,000.

95. We have shown in sect. 81 that, independent of the circulating medium exhibited above, bills of exchange in the manufacturing districts constitute the chief circulating medium; there is also another description of bills which are intimately connected with the question of circulation, viz. the Exchequer bills, as exhibited in col. 13, of statement III.: the function of these bills is, they are held principally by the metropolitan bankers, as an immediately convertible means of meeting any sudden or unusual demand upon them; being a legal tender for duties of customs, excise, &c., they are always convertible into current money within twenty-four hours; the Bank of England hold a considerable amount of these bills, for which they receive interest, giving in exchange their own notes, bearing no interest. We shall offer no observation here on the improvidence of such a system, but proceed to show the amount of national notes likely to be required for facilitating the most ex

tensive interchange of productions, the way in which they would at once be put into circulation, and the consequences which would necessarily follow the adoption of such a measure. To withdraw suddenly such an amount as £26,000,000 of gold from its function as currency, and throw it at once on the market as metal, or an article of merchandize, might lead to embarrassment; the government might therefore take all that offered, at some fixed rate to be agreed upon, in exchange for national notes; this we will suppose to call for £15,000,000, or perhaps £20,000,000, of notes: the Exchequer bills outstanding will be seen by col. 13, of statement III. to amount to £27,000,000; the whole of these would at once be converted into currency or national notes; and the claim of the Bank, beyond their subscribed capital, being about £23,000,000, in which, however, about £8,000,000 of Exchequer bills is included, leaving about £15,000,000 to be liquidated in currency or national notes; and, in addition to these, it is probable that from £5,000,000 to £10,000,000 more of notes would be almost immediately demanded for legitimate banking purposes in different parts of the United Kingdom. Thus the entire issue of national notes in the first instance may be estimated as follows, viz.

Against gold	15,000,000
Do. Exchequer bills held by private bankers, &c. . .	19,000,000
Do. do. by the Bank of England	8,000,000
In final settlement with do. .	15,000,000
Demanded by provincial banks	7,500,000
Total . .	£64,500,000

96. It is probable, however, that a portion of the amount issued against gold, as well as to the Bank, would seek to be funded, say to the amount of about £14,500,000, leaving £50,000,000 for active circulation. Proceeding upon these premises, let us, in the next place, see how the government and the public will then stand in relation to each other. The government will gain on behalf of the public, on one side, the interest on the Exchequer bills to the amount of about £700,000 per annum, and incur, on the other side, an obligation on the new stock to be created of £435,000 per annum, and be liable to the expense of manufacture and issue of the notes, equal probably to £200,000 per annum more; but then the government will be in possession of from £15,000,000 to £20,000,000 value in gold, which may either be disposed of gradually, as occasion may serve, in purchase of beneficial arrangements of intercourse with the several nations of the world, or held in whole, or in part, as a reserve for war, failure of harvests, or other contingencies: at all events an important object will be gained for all parties, by withdrawing it from fettering the circulation, and cramping the productive energies of the country.

97. The two objections to a paper circulating medium are its liability to excess of issue, and imitation. The first of these objections is valid enough, when issued as it was by country bankers, upon their individual credit, or as it might be if issued indefinitely by a government; but the objection does not apply to the proposition here advanced, based, as here proposed, on the £800,000,000 of national obligation; inasmuch as no more will be converted into currency than will be necessary for its legitimate purpose of facilitating the exchange of commodities, aiding the means of production, and advancing those improvements which the spirit of the age invites, and which such an order of currency is in itself calculated to promote and encourage: when it ceases to be required, and to find active and profitable employment for such purposes, it will revert back for conversion into stock, and thereby serve at all times as an indicator of the state of the activities of the nation; and if, from any temporary current of feeling which caprice or any other cause may engender, the notes should press in, for fixed investment, to an extent indicative of an undue contraction, the quarterly payments of the government will lead to a reissue, whereby a uniform and just equilibrium may always be maintained. The objection in regard to imitation is one which cannot be entirely overcome; but the objection lies equally strong against a metallic currency, and it is questionable if recent improvements in the arts will not afford greater protection against the imitation of paper than can be obtained against the admixture, or debasement, and abrasion of metal; against which, for the purposes of currency, we might proceed to point out various other objections, while none other of a valid nature can be brought against paper.

98. To fix permanently the rate of interest for the £800,000,000 capital stock of England at 3 per cent., while the rate of interest on the public securities or stock of all other countries rates from 5 to 6 per cent., may seem to be a measure calculated to induce a transfer of the capital of England to other countries; we will therefore now show how the attempt at a transfer of property would operate. A stockholder in England is desirous to transfer a given sum, say £5,000, of stock from England to France, or any other country; the stock in England being convertible on demand into currency notes at pound for pound, if the transfer is attempted to be made in-gold, gold will be sought after as an article of merchandize, and a price demanded for it accordingly. A demand for such a sum as £5,000 would not probably produce any effect on the price; but, in proportion as the amount is attempted to be increased, a price will be demanded for gold calculated to check the operation; so that, whatever may be the nominal rate of interest in the different countries of the world, a due equilibrium will be maintained through the medium of a fair market price for that metal. To a certain extent, transfers of capital may continue to be made, as they have hitherto been, through the medium of the export of the products of British labour; and the demand for gold will not show itself until a difficulty exists in the disposal of British productions to an a tional extent, corresponding with the amount sired or attempted to be transferred. In like man on occasions of a sudden demand for supplie foreign grain, derangements in the circul medium will be prevented, and the exchang

in be more confined than heretofore to pro-
ctions of British labor, inasmuch as gold will
perience the effect of a rise in price more im-
diately than any other article.

9. A circulating medium founded on the
is we have here proposed, while it would
e the energies of the country from the chains
which they have for eighteen years past been
thralled, would at the same time render the
actice of banking more simple and intelligible,
d thereby render it likely to be more exten-
ely carried on, and more generally useful, than
has hitherto been. The government, on behalf
the public, being the only issuers of circulating
edium, the only security required from bankers
ill then be for the deposits made with them;
is must at all times, and under all circum-
ances, be an affair more or less of risk, whe-
er banking be conducted by individuals, by
rtnerships of two, three, or more members, or
an extended joint-stock proprietary, inasmuch
all are equally exposed to chances, which
reasonable amount of capital, nor pru-
nce, can absolutely prove a protection
ainst. Joint-stock companies, with a capital
owedly subscribed and actually paid up for
e purpose of aiding the productive industry of
e districts in which they may be formed, afford,
nerally speaking, a more ample security than
dividuals; while, on the other hand, the indi-
dual or more private establishments afford the
eatest facility: joint-stock, or public compa-
s, are too apt to be governed by fixed rules
practice, while with the individual banker a
ong mutual confidence generally prevails be-
een him and the parties with whom he is con-
cted in business transactions; and he more
dily yields to the exigencies of particular cir-
nstances, which the forms or fixed rules of
blic companies prevent.

100. The scheme we have here proposed will
seen not in the slightest degree to alter the
ctice of banking in regard to deposit, dis-
nt, and agency, but effectually separates from
m the practice of issue; and, as it was the
e of notes, and not the advantages derived
m deposit, discount, and agency, which more
ticularly constituted the exciting principle of
vincial bankers in the United Kingdom from
8 down to 1819, and which still constitutes
leading feature of banking in Scotland, and
h the provincial bankers of Ireland, as well
of several of those of England and Wales, as
as their reissuable notes of £5 and £10, &c.,
concerned, and as we propose the extinction
all provincial reissuable notes on demand of
ger amounts, as well as of £1 and £2, we have
show how the provincial banker is likely to
affected by the suppression of his £5 and
0 notes. We have shown in § 73, that while
e notes are issued at the rate of five per
t. per annum, the issuer is obliged to provide
protecting capitals to a certain extent to
et them, which, with the stamp, probably
ounts to little less than three per. cent. on his
le circulation; so that the circulation of the
tional notes at the rate of five per cent. per
num, which will cost him only three per cent.,
ll afford him an equal if not greater advantage than that derived from the issue of his own notes. There is, however, another species of circulating medium, and a practice in provincial banking which we have not yet described; in the development of which we shall suggest an alteration that will more than compensate the provincial banker for the suppression of his reissuable notes.

101. A prominent feature in the practice of the provincial banker is taking in deposits from the traders of his town and district; if it is a manufacturing district, the cash or money deposits which the banker receives from the shopkeeper and trader, suffice to supply the manufacturer with the necessary funds or means for paying his wages, &c., while the deposits of the shopkeeper or trader are liquidated by the banker drawing in their favour on his house of agency in the metropolis, in bills at forty-five days' or two months' date, in such amounts as the demands of the shopkeepers require for their purchases in the metropolis or elsewhere. These bills, being drawn upon, and accepted by, the metropolitan banker, require, like the provincial bankers' promissory notes on demand, a protecting capital in the hands of the metropolitan agent. Now, if in future these bills are drawn payable at, instead of upon, and to be accepted by, the metropolitan agent, no protecting capital will be requisite until within a day or two of their becoming due. By such a change of practice as this, the provincial banker will be enabled to extend his accommodation in his district as effectually, and more advantageously to himself, than by the circulation of his own notes, which are always liable to revert back upon him without any previous notice, while the drafts, as here proposed, will give him a definite time for providing for them.

102. We have so far described all the various modes of banking, as practised in the United Kingdom, as well as the nature and amount of the circulating medium, and shown the extent to which banking transactions have been carried on, as far as the internal transactions of the kingdom are concerned; its external transactions, however, independent of its exports and imports, tend greatly to augment the aggregate of banking operations, and, in some degree, to augment the amount and vary the character of the circulating medium. During the war from 1793 to 1815, bills, to the amount of from £5,000,000 to £25,000,000 annually, were drawn in different parts of the world on account of the British government, for subsidies and supplies to the fleets and troops of England every where distributed; these bills were generally drawn payable at thirty or sixty days' after sight, and were remitted in payment of British products exported; and, when accepted by the department of government to which they were addressed, entered more or less into the circulating medium of the country.

103. Since the termination of the war, the transfer of capital from British to Foreign security has given rise to a drawing of bills on England to the amount of £5,000,000 to 7,000,000 annually; British and Irish absentees, and travellers in different parts of Europe, give rise

to nearly a corresponding amount of bills; and, in addition to these and such bills as are legitimately drawn on account of foreign products imported, mercantile houses of established reputation give rise to other bills to the amount of several millions annually, based merely on the credit of the respective drawers. In addition to the sixty banking establishments of the metropolis, as described in § 79, there are about twenty other establishments, through whom most of the bills here described pass, and whose transactions partake as much of banking as they do of a mercantile character. They draw bills for any amount on any part of the world, and give money for those drawn by others; and accommodate, in that way, the commercial transactions of the world at large, as the bankers of Manchester and Liverpool (see § 81) do the transactions of their respective districts; these foreign transactions are designated exchange operations.

104. Having now explained all the modes of banking and exchange of the United Kingdom, in regard to its external transactions as well as its internal, we will now proceed to show the nature and extent of banking in France. By the law of 24 Germinal, year xi. (14th April, 1803), the bank of France was established with a capital of 45,000,000 francs, afterwards doubled, with an exclusive privilege of issuing of notes for 40 years. The operations of this establishment consist, 1st, of discounting bills of exchange, not exceeding three months' date, and with the signatures of three parties, undeniably (*notoirement*) solvent, or with two undeniably solvent signatures, if guaranteed by a deposit of any public stock or other readily convertible security.

2nd. To advance money on bullion and foreign coins, not less than 10,000 francs in amount, at the prevailing rate of interest for 45 days.

3rd. To afford security of deposit for bullion, coin, diamonds, and deeds, for a charge of one-eighth per cent. for six months.

4th. To open accounts, current or drawing accounts, for public establishments and private persons, demanded under proper regulations.

5th. To furnish all persons with récépisses for all amounts payable at sight. These correspond with the post bills of the bank of England.

This establishment from its commencement has maintained a high and deserved reputation. Its capital is divided into 90,000 shares (actions) of 1000 francs each, 67,900 of which are in circulation. the emolument of the establishment arises chiefly from the discount of commercial bills, which amounts to about 3,600,000 francs per annum; the amount discounted averaging about 560,000,000 francs per annum. The interest on treasury bonds does not exceed 250,000 francs per annum, and the emoluments derived from interest on bullion and coins, and commission on deposits, does not exceed 150,000 francs per annum; the remaining portion of the income consists of about 2,300,000 francs of *rentes*. The charges of the establishment for clerks' salaries, &c., amount to about 900,000 francs per annum.

105. Although this is the only bank of paper circulation in all France, the amount does not exceed 200 to 250 millions of francs (£8 to 10,000,000) in notes of 1000 francs and 500 francs, against which the bank holds a reserve of specie of from 180 to 200 millions of francs; hence it would appear that the notes are circulated more for the convenience of the public than with a view to profit. This establishment is under the direction of a governor and two deputy governors appointed by the king—the first must possess 150, and the latter 50 shares each; a general council of fifteen members; three *censeurs*; a council of accounts, consisting of twelve members; nine chiefs of department, and six cashiers; under whom are employed about 200 clerks, porters, &c. A clear and circumstantial account and report of the proceedings and state of the establishment is published half-yearly.

106. The *Almanack du Commerce de Paris* enumerates, under the head of *banquiers*, about 160 establishments in that city; and, to a certain extent, these establishments take in deposits and discount bills in a way not dissimilar to the bankers of London, while their general business is essentially different. In the first place, with the exception of the 200 to 250 million francs of notes of the bank of France, the circulating medium of France is composed entirely of silver: since 1816, she has raised upwards of 3,500,000,000 of francs on annuities, (*rentes*,) and coined upwards of 200,000,000 francs of circulating medium. These operations have given rise to an active correspondence and exchange with the capitalists of all Europe, and have been participated in, more or less, by all of the 160 establishments adverted to above; but, on the whole, the transactions of the greater part of them partake more of the character of mercantile agency than of bankers. The cities of Bourdeaux, Lyons, Lisle, &c. have each several similar establishments denominated bankers, who facilitate payments in Paris and other distant parts of France, and different parts of Europe; but France has no establishment for economising and rendering active and profitable the deposits of the public; this is a principle which she has yet to learn and reduce to practice.

107. All the capitals and several other of the principal cities of Europe have now their banking establishments. Next to the bank of France, the *Imperial Commercial Bank of Russia* holds the highest place. At the close of the war in 1817, Russia had a paper circulation amounting to upwards of 830 millions of roubles, about £40,000,000. Since 1817 a considerable portion of the paper roubles have been converted into annuity stock, and loans have been raised in foreign countries to enable a further part to be exchanged for specie; and, in 1821, the paper roubles were reduced to 639 millions. The paper rouble, however, in notes some as low as one rouble, forms the bulk of the circulating medium of Russia; and with such a circulation the *Imperial Commercial bank* was established in 1818, with a capital of 17,295,30 roubles; and the following report of the finance

inister, Count Gourieff, in May, 1821, will est show its progress up to that time; since hen it has been gradually advancing in activity and usefulness, merely as a bank of deposit, iscount, and agency; the government being he only issuer of the circulating medium.

108. "The increasing transactions of the Imerial commercial bank, which afford such great acilities to merchants, are not of less advantage o the other classes of society. The considerable sums which it throws into circulation cannot fail in moderating the general rate of interest. In order to be of still greater service to commerce and industry, in conformity with the intentions of the law of the 7th May, 1817, the bank, besides the one it had opened at Moscow, has established new ones at Archangel, Odessa, and at Nigninovgorod, during the time that the annual fair is held in that city; it has also now a branch bank at Riga, and will establish one in future in all the principal cities of the empire. Pursuing all the same objects, and strictly conforming to the same principles, they have, in a very short space of time, given great extension to the circulations of trade, and afforded them considerable facilities. The account rendered of the operations of the bank in 1820 will convince you, gentlemen, that, if on the one hand the resources of this establishment have been augmented with large additional capitals, deposited in its coffers by private persons, merchants on the other hand, sensible of the advantages it offered them, have entrusted it with a large proportion of their business, and have in a manner turned over to the bank and its branch establishments the whole of their financial circulations. With what remained over of the preceding year, the bank and its various provincial branches have, in the course of the year 1820, received and transferred more than 68 millions; 33 millions of which has been transmitted from one city to the other by means of drafts upon each other. The deposits upon interest confided to the bank here, and its office at Odessa, have amounted to 86 millions of paper roubles, and three millions metallic ditto. Deducting what has been drawn out, there remained on the 1st of January, 1821,

58,156,935 roubles, 69 copecks in bank notes, and
555,822 " 55 " specie.

"At the commencement of the year 1820, these deposits only amounted to 33,304,000 roubles in notes, and 1,933 roubles in specie. This augmentation proves that the capital and credit of the bank are increasing; by which it will acquire additional means of extending its discounts, by employing to that effect a part of the sums confided to it at interest. With the above amounts added to what remained over of 1819, the bank discounted in 1820 effects to the amount of 182 millions; and what proves the circumspection of the bank in the choice of these effects, is, that only 69,459 roubles 83 opecks have been protested; for the payment f which, actions at law have been instituted. The bank only advanced 5,200,000 roubles pon merchandize, and, deducting what it has ceived back, there did not remain due more than 2,317,687 roubles; the re-payments have all been made with punctuality. The discounts have greatly exceeded the advances upon merchandize, which evinces the progress individual credit has experienced. The fund, or capital of the bank, amounted, at the beginning of 1820, to 20,910,173 roubles, 14 copecks: it accumulated in the course of the year to 24,889,950 roubles, 11 copecks. The nett profits of the bank, over and above the interest paid and remaining due upon the deposits confided to it, after deducting the charges of its establishment, amount to 1,946,825 roubles, 45 copecks, being about 7 per cent. on its capital. Altogether the bank and its offices have transacted business during the last year, 1820, for

955,561,231 paper roubles, and
12,052,842 metallic ditto."

109. The Bank of Issue was established in St. Petersburgh, in 1768, when 40,000,000 of roubles in paper were first put in circulation, afterwards increased to 100,000,000; it was during the war from 1802-3 to 1810 that the issue became so extended. In February of the latter year, when the amount in circulation exceeded, as before stated, 830,000,000 of roubles, an *Ukase* was issued, declaring all the property of the state a guarantee for the validity of all the notes then in circulation, and that no further increase should take place. After the termination of the war, in 1815, the Bank of Issue established in 1768 was converted into an *Assignment Bank* for the exchange of new notes for old, and between the 1st of Jan. 1817, and the 1st of Jan. 1821, in addition to 191,109,420 roubles withdrawn from circulation, 632,603,115 roubles in new notes had been issued for the same amount of old issued previous to 1817; in this amount 6,857,155 roubles of *forged notes* were included as a loss to the state, against which 12,287,465 roubles of legitimate notes are assumed as gained by the state, old notes to that amount never having been presented for exchange. In addition to the assignment and commercial banks, the capital of Russia has another establishment denominated a *Loan* bank, which takes in deposits from one class of individuals, and lends out on security to public bodies or individuals engaged in works of public utility. This establishment bears some analogy to the exchequer bill loan office of the British government, the difference being, that in Russia the loans are made out of deposits, and in England the government issues bills which are converted into money on the Stock Exchange.

110. Calcutta, and the other principal cities of the Peninsula of India, Rio-Janeiro, Buenos Ayres, New South Wales, the Cape of Good Hope, and Canada, have now all their banks, founded chiefly on the principles of the provincial banks of England, and therefore requiring no especial elucidation. It is in the United States of North America where, next to Great Britain, banking has made the most rapid progress, and produced the most extraordinary results. The capital of all the banks in the Union, in 1790, did not exceed 2,000,000 dollars. In 1791 a national bank was chartered for twenty years, with a capital of 10,000,000 of

dollars; and, previous to the expiration of its charter in 1810, eighty-eight other banks had been established in different parts of the Union, with a capital of 42,610,000 dollars, in addition to the capital of the national bank. The dissolution of the Bank of the United States in 1810 gave rise to no less than 120 new establishments during the four years 1811–14. In August and September, 1814, all those below Connecticut in the statement in § 113, suspended payment in specie, consequent on the effects of the war declared in June, 1812; and the following depreciation ensued on the notes of the several banks of New York, Philadelphia, and Baltimore :—

		New York.	Philadelphia.	Baltimore.
1814	September . .	10	—	20
	October . . .	10	—	15
	November . .	11	—	10
	December . .	11	—	14
1815	January . . .	15	—	20
	February . .	2	—	5
	March . . .	5	—	5
	April . . .	5½	—	10
	May	5	5	14
	June . . .	11½	9	16
	July	14	11	20
	August . . .	12½	”	19
	September . .	13	15	20
	October . . .	16	”	21½
	November . .	12½	16	15
	December . .	”	14	18
1816	January . . .	”	”	15
	February . .	9	”	13
	March . . .	12½	12½	18
	April . . .	10	14½	23
	May	12½	14	20
	June . . .	”	17	20
	July	6	15	15
	August . . .	5	10	12
	September . .	3	7½	10
	October . . .	2	9½	8
	November . .	1¾	7	9
	December . .	2¼	7	9
1817	January . . .	2½	4½	3
	February . .	”	4	2½

111. The derangement in social affairs inseparable from such a variation in the circulating medium led to the proposal of the secretary of the treasury in December, 1815, for a new national bank, founded, as the report avowed, "on the necessity of restoring specie payments and the national currency." The charter was confirmed by Congress in April, 1816, and organised for business in Jan. 1817, with a capital of 35,000,000 of dollars; and by Jan. 1820, the number of other banking establishments had increased to 307.

The following statement shows the ap
tion of the shares of the Bank of th
States in Jan. 1832; the amount of not
culation at each of its branches in Sep
and amount of specie on hand at eac
in Jan. 1832.

Branches.	States.	Number of		Notes Circul tion, Sep.18 Dollar
		Shareholders	Shares of 100 ds. ea.	
Chief Office	Philadelphia	872	51,028	1,367,
Pittsburg	Pennsylvania			554,
Portland	Maine	14	498	79,
Portsmouth	N. Hampshire	24	511	101,
Boston	Massachusetts	211	11,175	271,
Providence	Rhode Island	36	1,218	113,
Hartford	Connecticut	60	1,539	171,
New York	City	373	30,881	834,
Utica .	New York	69		—
Buffaloe	do.			258,
Burlington	Vermont	2	27	96,
Baltimore	Maryland	624	34,235	528,
Washington	Dist. of Col.	61	2,725	647,
Richmond	Virginia	268	11,617	469,
Norfolk				532,
Fayetville	N. Carol'na	36	2,391	713,
Charleston	S. Carolina	730	40,242	835,
Savannah	Georgia	42	1,981	526,
Mobile	Alabama			940,
N. Orleans	Louisiana	17	119	2,623,
Natchez	Mississippi			—
St. Louis	Missouri			228,7
Nashville	Tennessee	5	258	1,285,
Louisville	Kentucky	22	252	660,
Lexington				906,
Cincinnati	Ohio	14	556	647,
	New Jersey	75	2,707	No
	Delaware	42	1,531	tablish
	Indiana	2	50	States
	Illinois	2	107	Utica
	Arkansas	1	42	appear
Held by Foreigners, chiefly English		470	84,055	establi 1829
By the U. S. Government			70,000	
In Transfer			115	2,5
Totals		4072	350,000	153476

112. The statement A, at page 474*, sl
situation of this bank in each of the twel
1819-30, according to which it appears
the close of the latter year, its assets exc
liabilities by 2,766,129 dollars; at tl
time, its specie amounted to only 7,
while the amount due to foreign shar
was 8,405,500 dollars; and while, in t
of the dissolution of the bank, 28,000,(
lars in specie would be due to sharehol
dependent of 7,000,000 to the Unite
Government, the specie in all the bank
Union (the bank of the United States in
was only 22,114,967 dollars; yet, und
circumstances, the president of the Unit
in 1832 refused to ratify an act of Con
the extension or renewal of its charter.

113. The following statement sh
number of banks in operation in each
the union in June 1830, and the a
amount of capital in each state, and als
number of banks which failed between t
Jan. 1811, and the 1st of July 1830,
amount for which failed in each state.

Banks in Operation in the United States of North America, on the 1st. of January, 1830.			Banks which failed between the 1st Jan. 1811 and July 1, 1830.	
STATES.	No. of Bks.	Amount of Capital, in Dollars.	Bks.	Capitals.
1 Massachusetts	66	20,420,000	6	850,000
2 Maine .	18	2,050,000	8	1,150,000
3 New Hamps.	18	1,791,670	2	129,600
4 Vermont .	10	432,625	-	——
5 Rhode Island	47	6,118,397	1	200,000
6 Connecticut	13	4,485,177	2	600,000
7 New York .	37	20,083,353	10	3,378,676
8 New Jersey	18	2,017,009	7	1,142,400
9 Pennsylvania	33	14,609,963	16	1,811,558
10 Delaware .	4	830,000	1	45,000
11 Do. . .	2	no return.	-	——
12 Maryland	13	6,250,495	9	1,821,162
13 Dist. of Col.	9	3,875,794	4	1,657,460
14 Virginia .	4	5,571,100	10	421,415
15 N. Carolina	3	3,195,000	2	——
16 S. Carolina	5	4,631,000	1	20,000
17 Georgia .	9	4,203,029	1	480,000
18 Louisiana .	4	5,665,980	2	924,000
19 Alabama .	2	643,503	3	337,112
20 Mississippi	1	950,600	-	——
21 Tennessee	1	737,817	4	2,229,782
22 Ohio. . .	11	1,454,386	18	1,911,179
23 Michigan .	1	10,000	1	10,000
24 Florida .	1	75,000	-	——
25 Kentucky .			18	4,307,431
26 Indiana .			2	257,624
27 Illinois .			2	162,910
28 Missouri .			2	400,000
	330	110,101,898	129	24,212,339
Uanscertained, principally in Kentucky.			36	

114. Statement B, at page 474*, shows the progress of banking institutions in the United States of North America since 1811, and the situation of all the banks of the Union in 1830, in regard to their capital, notes in circulation, specie, and deposits. The states are there exhibited in five districts, for the purpose of showing the inequality of specie in different parts of the Union. In the western states 2,686,396 dollars in specie are held to sustain a circulation of 4,684,860 dollars in notes; while in the state of New York, and the adjoining states of Connecticut on the north, and New Jersey on the south, the centre of all the activities of the Union, the circulation of 12,737,539 dollars in notes is sustained by only 2,841,746 dollars in specie. This statement is further interesting in showing the very limited amount of specie in the aggregate, with which all the exchanges between a population of 13,000,000 to 14,000,000 of people, maintaining an active and extensive intercourse with all the nations of the world, are acilitated and effected; 22,000,000 dollars in pecie, less than £5,000,000, sustains the operaons of 350 banks of circulation, including the ranches of the national bank, diffusing life and nergy over 100,000,000 square miles of terriry; we say sustains the operations of the nks, inasmuch as it forms no part of the cirlation, but is held as a protection to the ,000,000 of notes which, with about 10,000,000 dollars in small coins, forms the exclusive circulating medium of that extensive and rapidly improving territory.

115. While in the act of writing the preceding sections [on the 31st May, 1833] the chancellor of the exchequer of Great Britain and Ireland was developing to parliament, in committee of the whole house, propositions for the extension of the charter of the Bank of England for a period of twenty-one years, subject "to the contingency, that, if at the end of ten years the then government should think proper to alter the system, it should have the power to give a year's notice to the Bank; and, in that case, if the government so desired, that the charter would expire at the end of the eleventh year:" subject to this condition the chancellor of the exchequer proposed "to continue the *monopoly* to the Bank of England as far as regarded the metropolis—that was, that no bank with more than six partners should be allowed *to issue notes* in London, or within sixty-five miles of it." It was next proposed that the Bank should make a weekly return to the treasury of the amount of bills and notes in circulation, and also of deposits, and that the average of such issues and deposits should be published quarterly. The chancellor of the exchequer then said, "*that the convertibility of bank notes to bullion was essential to a sound system of banking!!!* but having a bank secured by a ready check, such as that which he had stated, he did not think there would be any danger in securing banks against sudden internal drains of gold. He proposed, therefore, to make Bank of England paper *a legal tender* in every place except at the Bank of England itself, or at its branch banks."

116. It was next proposed to diminish the capital of the Bank from its present amount of £14,600,000 to about £11,000,000, and that the Bank should give the fixed sum of £120,000 per annum out of the amount now allowed by law for the management of the public banking account and transfers of the national annuity account. So far in regard to the Bank of England; when it was next proposed that every banking company of more than six partners should be a joint stock company, such company to be established by charter; and if using the paper of the Bank of England, may be established within the limits of the Bank of England's monopoly, viz. sixty-five miles of the metropolis: the conditions on which charters are granted to be, that when issuing their own notes half the subscribed capital shall be paid up and deposited either in the government funds, or some equally good securities, and the partners to be liable to an unlimited responsibility; but if using the paper of the Bank of England, then only one quarter of the subscribed capital to be paid up, and the partners only liable to the amount of their shares. The government to have the power of deciding on the propriety of granting the charters; and with the view of enabling the government to know at all times the exact amount of country bankers' notes in circulation, a duty of 7s. to be charged on every £100 of notes which they issue. A statement of the accounts of each individual bank should be

sent to the government, as a strictly confidential paper, not to be published separately, but to enable a general result of the banking operations of the kingdom to be given to the public periodically.

117. The following is a recapitulation of the propositions in the official form, *verbatim*, in which they were submitted to the committee.

1. That it is expedient to continue, for a limited period, to the Bank of England, certain of the privileges now vested by law in that corporation, subject to such conditions as may be provided by any act to be passed for the purpose.
2. That, provided the Bank of England shall be bound by law to discharge, in the legal coin of the realm, all such of its debts and liabilities as shall be demanded at the Bank of England, or at any of the branch banks thereof, it is expedient that the promissory notes of the said corporation be made a legal tender for all sums of £5 and upwards.
3. That provision be made by law during the present session of parliament, for the repayment to the Bank of England of one-fourth part of the amount of the debt now due by the public to that corporation.
4. That the rate of allowance and remuneration now secured by law to the Bank of England for the management of the public debt, and services rendered to the public, be continued to that corporation for the limited period to be fixed as aforesaid, subject to an annual reduction of £120,000.
5. That the laws restricting the interest of money to £5 per cent. shall be repealed, so far as they relate to bills of exchange not having more than three months to run before they become due.
6. That it is expedient to give facilities, by the grant of royal charters, for the establishment of joint stock banks, at a certain distance from London; but that every such royal charter shall contain certain stipulations to be enforced with respect to all such chartered banks.
7. That all banks issuing promissory notes payable on demand, shall enter into a composition in lieu of stamp duty, at the rate of 7s. for every £100 on the notes which such banks shall have in circulation.
8. That it is expedient to make provision with regard to joint stock banking companies.

118. It will be seen by the three preceding sections, 115-117, that the object aimed at by the propositions submitted by the chancellor of exchequer to parliament, is, to establish an uniform order of paper currency, based on gold at £3. 17s. 10½d. per ounce; and to vest the control of the circulation and the profit thereof in the hands of the Bank for a limited term of years, thereby continuing a monopoly (as we shall show hereafter) of the most objectionable kind, in opposition to the general voice and feelings of the bulk of the people, as well as to the prevailing tenets of the government itself. One point to which we have not yet adverted is contained in
the fifth paragraph of the official pr
above; holding this in view, we will
ceed to show the objections to the
general as well as in detail on one sid
advantages which it promises on
Making the notes *a legal tender* conve
gold only at the Bank of England it
branches, is a part of the scheme whic
an enlargement of the circulation, and
promises to facilitate the operations of
and the scheme is so devised as to
Bank to withdraw all its branches fo
pose of concentrating the convertibility
in the metropolis alone; it doubtless
intention of the Bank of England to wi
branches wherever joint stock bank
tablished to circulate its paper.
making the notes a legal tender, the
good: nor is there any objection to be
the general principle on which joint st
are proposed to be established; and th
their circulation, liabilities, and asse
per and commendable.

119. But the scheme is exceedingly
able on the three following grounds, v

1st. As being based on gold at a
price, instead of on the £800,000,000
public annuities, as proposed in sectio

2nd. For the fluctuation and varia
rate of interest which it so strongly te
rise to.

3rd. For the arbitrariness, and te
caprice, which it establishes, and th
cherish.

It is shown to demonstration in Mr.
digest of the accounts and papers pr
parliament since 1799, that the cause of
ciated value in all our manufactured pr
and consequent diminution of profits
has arisen from the large transfer of ca
British to foreign securities which
place since 1816. It is shown that,
that date the British government hav
strumental in causing about £70,00
applied to the purchase of 3 per cen
rates varying from 78 to 94, equal to
twenty ounces of gold, for which the
less than eleven ounces in 1813-1
responding amount of capital has bee
the public stocks of the different
Europe, at an average rate of interest
per cent. Thus, while about £2,
annual interest has been cancelled i
and the country at large relieved from
taxation to a corresponding amo
£4,500,000 of annual interest has be
abroad; and it is in consequence of
which these transfers of capital and
interest become involved with the
transactions of Europe, that the whol
terest on the capital so transferred,
or be it less, falls wholly and exclusiv
manufacturing and productive class
land, inasmuch as the interest is
those means which otherwise would
augment the means of payment for t
of British industry exported.

120. It is the facility which the
gold affords for the transfer of cap

the preceding section, that renders it
ionable as the basis of the circulating
Had the circulating medium at the
n of the war been based on the
,000 of stock which the war had
r indeed on any other internal means,
like any other commodity been left to
wn level in price, a converse effect
e been produced to that which has, so
the productive interest of England,
duced: the transfer of capital might
n place, but it would have confined the
nore to productions of industry at re-
g prices, inasmuch as the predilection
n would have enhanced its price pro-
to the demand for it, and thereby
rated beneficially to the importer of
one side, as well as to the exporter of
cts of British industry to Europe on
In the first instance bullion is ob-
exchange for the products of British
being the *only* commodity which a
tion of the western world yet has to
xchange: and on this commodity the
overnment fixes a *maximum*. How
idiculous, and how palpably unjust to
ercial operator to that part of the
He brings his bullion to a focus of
which would probably afford him 30
cent. more than a perverse law allows
tain; and this, not to benefit the party
or retaining the force of that law, but
e another course of operations, which
e ruin of all the productive interests of
e.

is not, however, the commercial dis-
which a low fixed price of gold in-
he activities of the community, that
exclusively its objection as the basis
culating medium. The objections are
; to allow the article to be demanded
hen one and a half, or any other price
readily given, is an absurdity too pal-
eed further observation. The greatest
however, lies against the constant
to which it subjects the circulation
and constant uncertainty to which it
l the rewards of industry. A consider-
it is true, may pass away without any
ible derangement being manifest; but
the disproportionate rate of interest in
nd the other nations of the world con-
long will the tendency to the transfer
continue, and consequently so long
ue sudden and unexpected demands
; and, should there be another such a
son as that of 1816, (and we are, from
ar, liable to a succession of such har-
le an enlarged circulating medium
required to sustain the enhancement of
equent thereon), the increased demand
which would inevitably ensue would
cisely the opposite effect. We might pursue the subject to a much greater length, but we trust enough has been said to prove the folly of such a basis as gold, for the circulating medium of a community so constituted as that of England.

122. The space assigned for this article precludes us from entering into any further elucidation of this interesting and important subject; except a few observations on the subject of SAVINGS BANKS, institutions for the deposits of small sums.—Schemes for this purpose were first suggested at the close of the last century; but it was subsequent to the termination of the war in 1815 when they were made a government measure, by a fixed rate of interest being guaranteed to the depositors. Between January 1815, and November 1830, 402 banks had been established in England and Wales; at the latter date the number of depositors amounted to 378,316, exclusive of 4278 Friendly Societies, and 1826 charitable institutions, and the total sum deposited £13,420,976; at the same date there were 73 banks in Ireland, the total number of depositors 34,638, and the sum deposited £945,991. The deposits in these institutions have been considered by some as evincing growing prudential habits, and consequently increasing comfort and independence of the working classes; but this is fallacious: during the earlier years of these institutions, the rate of interest guaranteed to the depositors considerably exceeded the interest yielded by the public Annuity Stocks; the more crafty, therefore, of the monied fraternity, sold 3 per cent. stock and vested it in the Savings Banks; and to obviate the obstacle which the limitation of deposits in Savings Banks prescribed, being not more than £20 at any one time nor exceeding £200 per ann., the sums transferred from the 3 per cents., were deposited in the savings banks in the names of the wife, children, and relations of the parties so transferring, and by this artifice, instead of £200, from £1000 to £2000 has been annually transferred. The rate of interest on the deposits in savings banks having been lowered, the inducement to transfer from the 3 per cents. is diminished, and the transactions of the savings banks are now more confined than heretofore to the class of persons for whom they were intended. The principle on which the Saving Banks are founded, and their economy of management, are unexceptionable enough, but they have, nevertheless, up to this time, had a most baneful effect. The deposits are vested in the 3 and 3½ per cents. by the commissioners of the sinking fund, as the trustees of the depositors; the total sum deposited has therefore aided the transfer of a corresponding amount of capital from British to foreign security. For a more complete elucidation of the working and effect of these transactions, see the article SAVINGS, in the further part of this work.

Statement A, showing the situation or condition of the Bank of the United States, in each of the twelve years 1819-30. The amount of the total liabilities in column No. 7 is made up of the 35,000,000 dollars, due equally in each year to the shareholders, in addition to the amounts due to depositors, and holders of notes, as exhibited in cols. 8 and 9.

	ASSETS.						LIABILITIES.		
	Bills discounted.	Domestic Bills.	Funded Debt.	Real Estate.	Specie.	Total Dollars.	Total Dollars.	Proportion of Deposits.	Notes in circulation.
1819	32,211,674	336,760	7,236,153	——	2,743,834	45,791,511	42,528,421	5,734,682	5,056,628
1820	28,808,267	1,526,600	8,258,701	——	5,214,773	45,991,960	43,808,341	6,581,628	4,410,322
1821	27,099,050	1,598,473	11,859,296	245.846	6,469,224	47,599,293	47,271,689	6,990,073	5,609,220
1822	28,574,893	2,394,688	13,116,004	579,152	3,711,145	46,927,905	48,376,082	6,365,570	5,562,322
1823	30,584,919	2,588,245	10,911,700	736,370	4,899,686	50,073,057	49,720,920	10,401,786	4,671,271
1824	29,478,255	2,563,672	13,373,095	1,393,193	5,909,351	53,853,604	52,717,566	12,918,108	5,935,496
1825	29,327,219	3,270,699	19,807,665	1,566,728	4,686,557	58,722,376	58,658,868	12,885,829	8,836,546
1826	29,592,103	3,592,145	17,885,210	1,745,566	5,174,643	57,814,051	57,989,667	12,578,523	10,235,528
1827	27,948,592	4,568,297	17,724,192	2,118,560	6,327,758	59,535,518	58,690,399	13,727,274	10,808,244
1828	30,820,944	6,018,784	17,127,077	2,298,352	6,205,107	61,868,559	62,470,264	14,454,169	12,414,390
1829	32,703,280	8,417,021	13,925,701	2,474,750	6,411,998	65,183,516	63,942,759	15,172,164	15,011,332
1830	32,541,124	7,476,321	11,717,071	3,876,404	7,175,274	66,322,274	63,556,145	14,788,809	13,048,984
	1	2	3	4	5	6	7	8	9

⁎ The total liability in the last year includes 1,161,001 dollars under the head of foreign account, and 2,375,079 due from banks, and notes of ditto.

Statement B, showing the progress of Banking Institutions in the United States of North America, from 1811 to 1831, and the situation of all the Banks of the Union in 1830 in regard to their capital, notes in circulation, specie, and deposits.

	Capital.	Notes.	Deposits.	Specie.
88 banks, January 1, 1811 . .	42,610,601	22,700,000		9,600,000
United States Bank	10,000,000	5,400,000		5,800,000
Total	52,610,601	28,100,000		15,400,000
208 banks in 1815	82,259,590	45,100,000		17,000,000
246 do. 1816	89,822,422	68,000,000		10,000,000
307 do. 1820	102,110,611	40,641,574	31,244,959	16,672,263
United States do.	35,000,000	4,221,770	4,705,511	3,147,977
Total in 1820 . . .	137,110,611	44,863,344	35,950,470	19,820,240
Do., as below, in 1830	145,192,268	61,323,898	55,559,928	22,114,917
The following shows the state of the banks in each of five divisions of the United States territory in 1829. The numbers refer to the list in section 113:				
New England States Nos. 1—5	30,812,692	7,394,566	4,203,895	2,194,768
Connec. New York and Jersey 6—8	26,585,539	12,737,539	14,594,145	2,841,746
Pennsylvania, Delaware, Maryland and Columbia . 9—13	25,566,622	11,274,086	10,850,739	4,170,592
4 Southern States . . 14—17	17,600,129	12,183,863	6,952,094	3,046,141
7 Western Ditto . . . 18—24	9,629,286	4,684,860	4,180,146	2,686,396
Total of 330 banks, 1830	110,184,268	48,274,194	40,781,119	14,939,643
United States bank	35,000,000	13,048,984	14,778,809	7,175,274
Total	145,192,268	61,323,898	55,559,928	22,114,917
Proportion 7 chief cities* . . .	53,211,605	17,144,422	23,137,129	7,258,025

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* Salem, Boston, New York, Philadelphia, Baltimore, Charlestown, and New Orleans.

TATEMENT showing the Weekly Circulation of Bank of England notes, in each of the seven years which follow, viz. 1792, being the year preceding the declaration of war in February, 1793, 1797, being the year preceding their nonconvertibility into gold, at a fixed standard; 1817, as the year of maximum of circulation, the increase from 1797 to 1817 having been progressive; 1822, as the minimum, on the return to convertibility into gold, at the previous standard of 1797; 1825-6, as years of great commercial activity; and 1832, as the year previous to this sheet going to press. The blank lines are drawn to show the periods when the National Debt, Dividends, or Annuities are payable. On the fifth of January and July they amount to about £8,000,000 at each period, while an increased issue of about £2,000,000 of notes is seen to suffice. The April and October payments are about £5,500,000 each.

	1792.	1797.	1817.	1822.	1825.	1826.	1832.
	£	£	£	£	£	£	£
Jan. 7	10,358,730	9,185,520	23,950,510	16,950,147	21,790,472	24,120,416	16,495,053
14	10,818,710	9,893,340	28,372,199	20,764,268	22,337,332	26,104,904	18,796,825
21	11,017,540	10,550,830	28,175,531	20,211,461	22,328,627	25,013,791	19,470,453
28	11,065,770	10,024,740	28,055,261	19,673,545	21,960,334	24,255,925	19,398,387
Feb. 4	11,335,940	9,667,460	27,703,811	19,211,845	21,931,937	23,673,737	19,157,008
11	11,428,920	9,431,550	27,386,121	19,034,229	21,307,879	23,450,151	18,796,570
18	11,539,060	9,137,950	27,518,561	18,679,243	21,234,674	24,466,510	18,451,810
25	11,148,500	8,640,250	27,326,221	18,348,009	21,060,145	24,955,050	18,143,070
Mar. 3	11,871,760	10,416,510	27,182,621	18,387,046	20,342,417	25,115,173	17,898,310
10	11,707,400	10,388,640	26,876,061	17,803,676	19,875,858	24,375,453	17,587,410
17	11,442,850	9,999,210	26,593,571	17,709,606	19,560,433	24,164,274	17,414,590
24	11,596,290	10,506,320	26,744,801	17,467,141	19,611,349	24,060,901	17,388,450
31	11,546,080	10,946,020	26,912,667	17,388,481	20,328,980	24,161,171	17,605,720
April 7	11,649,150	11,559,910	26,400,271	17,149,301	20,687,517	24,947,796	17,655,170
14	11,932,330	12,618,510	29,071,621	19,025,399	21,060,103	25,562,055	18,905,450
21	12,387,930	12,127,770	28,936,241	18,583,121	20,717,044	25,569,374	18,965,130
28	12,415,530	13,055,800	28,666,041	18,105,998	20,536,633	24,482,967	18,875,430
May 5	12,415,580	13,599,060	28,373,961	17,798,295	20,500,259	23,654,000	18,988,430
12	12,068,510	12,217,700	28,040,701	17,461,161	20,046,091	22,976,215	18,634,610
19	11,896,180	11,969,250	27,927,361	16,984,938	19,723,489	22,293,814	17,863,660
26	11,585,560	10,892,870	27,964,981	17,036,996	19,653,012	21,909,490	17,777,700
June 2	11,406,840	11,240,910	27,169,441	16,505,296	19,298,202	21,355,405	17,375,300
9	11,327,590	11,236,770	26,449,790	16,785,480	18,639,892	20,878,408	17,063,360
16	11,161,940	10,982,640	26,414,580	16,304,807	18,327,736	20,852,693	16,959,760
23	11,126,330	10,290,800	26,060,050	16,404,930	18,372,369	21,045,575	16,582,660
30	11,494,890	10,778,100	26,560,660	17,005,527	19,038,339	20,787,013	16,754,870
July 7	11,539,880	10,781,960	25,800,260	16,834,794	21,714,838	22,630,821	16,731,560
14	11,903,330	11,381,670	30,686,720	20,896,904	21,763,418	23,564,518	18,652,580
21	11,926,670	11,262,490	30,759,300	20,579,130	21,198,818	22,871,630	18,876,930
28	11,822,530	11,240,100	30,646,840	19,748,395	20,794,730	22,852,220	18,846,270
Aug. 4	11,737,120	11,111,330	30,920,360	19,287,790	20,157,200	22,653,454	18,753,820
11	11,566,180	11,466,560	30,374,260	18,833,458	19,738,770	21,983,284	
18	11,350,130	10,955,220	30,112,650	18,503,576	19,589,056	21,660,961	
25	11,005,660	10,568,210	29,971,699	18,498,856	19,290,570	21,388,029	
Sept. 1	11,306,240	11,439,180	29,543,710	17,464,796	19,028,070	21,421,297	
8	10,975,810	11,031,770	28,938,560	17,149,134	18,517,202	21,132,437	
15	10,787,650	10,716,230	28,712,160	17,540,955	18,252,171	20,653,131	
20	10,999,840	10,655,850	28,527,061	16,796,585	18,009,781	20,264,364	
28	10,852,080	10,654,330	28,559,511	16,798,699	18,506,562	20,408,194	
Oct. 6	10,966,340	10,509,840	28,925,911	17,231,846	18,173,445	19,584,501	
13	10,999,690	11,780,610	29,293,891	16,693,871	19,686,586	20,654,313	
20	11,489,330	12,116,960	30,502,360	18,387,096	19,027,460	21,050,060	
27	11,491,630	12,451,420	29,981,610	17,991,058	18,692,228	20,875,943	
Nov. 3	11,474,030	11,983,330	29,658,950	17,753,077	18,497,423	20,834,838	
10	11,416,970	11,677,550	29,544,611	17,456,991	18,031,872	20,527,490	
17	11,117,130	11,313,880	29,446,071	17,382,866	17,594,301	20,416,250	
24	10,894,620	11,215,330	29,050,230	17,218,660	17,464,890	19,906,857	
Dec. 1	10,981,970	10,688,660	28,698,540	17,457,244	17,477,294	19,301,328	
8	11,200,850	11,127,510	28,465,490	16,370,602	18,037,966	19,031,617	
15	11,083,740	10,759,930	27,967,590	16,088,529	23,942,827	19,049,078	
22	11,230,810	11,260,250	27,770,990	16,642,042	25,611,806	19,084,909	
29	11,289,250	11,139,080	27,601,180	19,483,697	25,709,526	19,049,738	

STATEMENT showing the liabilities and assets of the Bank of England, at the annual settlin
on the 28th of February, in each of the fifty-five years, 1778—1832, as laid by the Direc
the Bank before the Parliamentary Committee on the Bank of England Charter, in the se
1832; to which is here added a statement of the Income and Expenditure of the Govern

Years.	On the 5th of January, 1817, the Exchequer of Ireland was united with that of Great Britain; and, since that date, no separate account of the expenditure of Ireland has been kept; the Revenue, since 1817, has averaged about 4,000,000*l.* per annum, included, since 1816, in col. No. 1. Previous to 1817 cols. 1 and 2 exhibit the income and expenditure of Great Britain only. In 1815 the Revenue of Ireland was 7,334,786*l.*; and, since that year, taxes have been repealed and reduced in the United Kingdom equal to 34,000,000*l.* per annum.			Circulation.		Deposits.	To Liabil
	Income.	Expenditure.	Loans raised & Bills (out of col. No. 10) Funded.	£1 and £2 notes first issued under act of 37 Geo. III. cap. 28, dated March 3, 1797.	£5 and upwards, including Bank post bills.		
	£	£	£	£		£	£
1778				7,440,330		4,662,150	12,10
9				9,012,610		4,358,160	13,37
1780				8,410,790		4,723,890	13,13
1				7,092,450		5,796,830	12,88
2				8,028,880		6,130,300	14,15
3				7,675,090		4,465,000	12,14
4				6,202,760		3,903,920	10,10
5				5,923,090		6,669,160	12,59
6	14,656,663	15,810,481		7,581,960		6,151,660	13,733
7	15,894,178	14,714,038		8,329,840		5,902,080	14,231,
8	16,201,547	15,665,569		9,561,120		5,177,050	14,738
9	16,099,435	15,466,207		9,807,210		5,537,370	15,344,
1790	16,451,450	16,142,317		10,040,540		6,223,270	16,263,
1	17,806,097	17,173,062		11,439,200		6,364,550	17,803,
2	17,864,464	16,770,352		11,307,380		5,523,370	16,830,
			Loans.				
3	17,707,983	22,754,366	4,000,000	11,888,910		5,346,450	17,235,
4	17,899,294	29,305,477	12,007,451	10,744,020		7,891,810	18,635,
5	18,456,698	39,751,091	42,096,646	14,017,510		5,973,020	19,990,
6	18,548,628	40,761,533	42,756,196	10,729,520		5,702,360	16,431,
7	19,852,646	50,739,857	16,120,000	9,674,780		4,891,530	14,566,
8	30,492,995	51,241,798	20,000,000	1,448,220	11,647,610	6,148,900	19,244,
9	35,311,018	59,296,081	15,500,000	1,465,650	11,494,150	8,131,820	21,091,
1800	34,069,457	61,617,988	20,500,000	1,471,540	15,372,930	7,062,680	23,907,
1	35,516,351	73,072,468	36,910,450	2,634,760	13,578,520	10,745,840	26,959,
2	37,111,620	62,373,480	25,000,000	2,612,020	12,574,860	6,858,210	22,045,
3	38,203,937	54,912,890	12,000,000	2,968,960	12,350,970	8,050,240	23,370,
4	45,515,152	67,619,475	15,005,290	4,531,270	12,546,560	8,676,830	25,754,
5	50,555,190	76,056,796	24,521.409	4,860,160	13,011,010	12,083,620	29,954,
6	54,071,908	75,154,548	20,000,000	4,458,600	13,271,520	9,980,790	27,710,
7	59,496,731	78,369,689	15,700,003	4,109,890	12,840,790	11,829,320	28,780,
8	62,147,601	84,797,080	14,500,000	4,095,170	14,093,690	11,961,960	30,150,
9	63,879,882	88,792,551	22,532,100	4,301,500	14,241,360	9,982,950	28,525,
1810	67,825,597	94,360,728	13,400,000	5,860,420	15,159,180	12,457,310	33,476,
11	65,309,100	99,000,421	24,000,000	7,114,090	16,246,130	11,445,650	34,805,
12	64,752,125	107,644,085	34,721,325	7,457,030	15,951,290	11,595,200	35,003,
13	68,302,860	122,235,660	64,763,100	7,713,610	15,497,320	11,268,180	34,479,
14	70,240,313	129,742,396	24,000,000	8,345,540	16,455,540	12,455,460	37,256,
15	71,203,142	133,305,958	54,135,589	9,035,250	18,226,400	11,702,250	38,963,
16	62,640,711	86,507,962	3,000,000	9,001,400	18,012,220	12,388,890	39,402,
17	57,505,097	58,887,527		8,136,270	19,261,630	10,825,610	38,22
18	59,628,173	58,233,037	39,261,920	7,400,680	20,370,290	7,997,550	35,768,
19	58,677,155	57,858,282	12,000,000	7,354,230	17,772,470	6,413,370	31,54
1820	59,772,230	58,001,890	12,000,000	6,689,130	16,794,980	4,093,550	27,577,
1	60,679,600	58,194,263		6,437,560	17,447,360	5,622,890	29,507,
2	60,611,358	55,619,041		1,374,850	17,290,500	4,689,940	23,335,
3	58,740,605	54,397,234	13,089,419	681,500	17,710,740	7,181,100	25,573,
4	60,115,864	55,918,734		486,130	19,250,860	10,097,850	29,834,
5	58,363,301	54,980,128		416,730	20,337,030	10,168,780	30,922
6	55,902,334	57,049,195	8,023,228	1,375,250	24,092,660	6,935,940	32,403
7	55,756,401	56,859,224		661,390	21,229,220	8,801,660	30,692
8	57,297,235	53,573,714		416,260	21,564,450	9,198,140	31,178
9	55,934,966	53,637,675	3,000,000	356,830	19,514,020	9,553,960	29,424
1830	54,932,287	51,432,877		320,490	19,730,240	10,763,150	30,813
1	51,012,609	51,125,723		306,870	19,293,270	11,213,530	30,813
2				299,100	17,752,610	8,937,170	26,98
	1	2	3	4	5	6	7

ach year since 1784; and of Money raised by Loans and funding of Exchequer Bills, in each ear since the commencement of the war in February, 1793; and also of the amount of Exbequer Bills outstanding at the end of each of the forty-seven years, 1785—1831; and of the alue of gold coined within each of the seventy-eight years before mentioned.

Years.	SECURITIES.		Coin and Bullion.	Total Assets.	Balance in favor of the Bank.	Amount of Exchequer Bills outstanding.	Amount of GoldCoined.
	Public. £	Private. £	£	£	£	£	£
1778	7,898,292	3,322,228	2,010,690	13,231,210	1,128,730		350,438
9	8,862,242	2,073,668	3,711,150	14,647,060	1,276,290		1,696,117
1780	9,145,659	1,755,371	3,581,060	14,482,090	1,347,410		none.
1	8,640,073	2,546,007	3,279,940	14,466,080	1,576,800		876,795
2	10,346,055	3,448,015	2,157,860	15,951,930	1,792,750		698,074
3	10,016,349	2,779,431	1,321,190	14,116,970	1,976,880		227,083
4	7,789,291	3,829,929	655,840	12,275,060	2,168,380		822,126
5	7,198,564	4,973,926	2,740,820	14,913,310	2,321,060	9,481,423	2,488,106
6	6,836,459	3,516,781	5,979,090	16,332,330	2,598,710	9,358,387	1,107,382
7	7,642,587	3,716,463	5,626,690	16,985,740	2,753,820	9,524,177	2,849,057
8	7,833,857	4,030,653	5,743,440	17,607,950	2,869,780	10.953,474	3,664,174
9	8,249,582	2,711,108	7,228,730	18,189,420	2,844,840	12,101.504	1,530,711
1790	8,347,387	1,984,733	8,633,000	18,965,120	2,701,310	14,334,480	2,660,521
1	10,380,358	2,222,282	7,869,410	20.472,050	2,668,300	12,867.156	2,456,567
2	9,938,799	3,129,761	6,468,060	19,536,620	2,705,870	14,449,889	1,171,863
3	9,549,209	6,456,041	4,010,680	20,015,930	2,780,570	17,954,065	2,747,430
4	9,950,756	4,573,794	6,987,110	21,511,660	2,875,830	19,758,109	2,558,895
5	13,164,172	3,647,168	6,127,720	22,939,060	2,948,530	24,972,616	493,416
6	12,951,812	4,188,028	2,539,630	19,679,470	3,247,590	15,795,266	464,680
7	11,714,431	5,123,319	1,086,170	17,923,920	3,357,610	16,525,573	2,000,297
8	11,241,333	5,558,167	5,828,940	22,628,440	3,383,710	17,669,465	2,967,565
9	11,510,677	5,528,353	7,563,900	24,602,930	3,511,310	24,252,582	449,962
1800	13,975,663	7,448,387	6,144,250	27,568,300	3,661,150	31,898,878	189,937
1	15,958,011	10,466,719	4,640,120	31,064,850	4,105,730	25,185,241	450,242
2	14,199,094	7,760,726	4,152,950	26,112,770	4,067,680	18,436,295	437,019
3	9,417,887	14,497,013	3,776,750	27,691,650	4,321,480	23,107,615	596,445
4	14,684,686	12,314,284	3,372,140	30,371,110	4,616,450	29,516,406	718,397
5	16,889,501	11,771,889	5,883,800	34,545,190	4,590,400	31,005,210	54,668
6	14,813,599	11,777,471	5,987,190	32,578,260	4,867,350	31,175,942	405,106
7	13,452,871	13,955,589	6,142,840	33,551,300	4,771,360	36,005,348	none.
8	14,149,501	13,234,579	7,855,470	35,239,550	5,088,730	43,736,718	371,744
9	14,743,425	14,374,775	4,488,700	33,606,900	5,081,090	43,571,575	298,946
1810	14,322,634	21,055,946	3,501,410	38,879,990	5,403,080	42,363,510	310,936
11	17,201,800	19,920,550	3,350,940	40,473,290	5,667,420	47,221,658	312,263
12	22,127,253	15,899,037	2,983,190	41,009,480	6,005,960	51,947,084	none.
13	25,036,626	12,894,324	2,884,500	40,815,450	6,336,340	54,302,987	519,722
14	23,630,317	18,359,593	2,204,430	44,194,340	6,937,800	64,776,381	none.
15	27,512,804	17,045,696	2,036,910	46,595,410	7,631,510	46,719,432	none.
16	19,425,780	23,975,530	4,640,880	48,042,190	8,639,680	51,006,687	none.
17	25,538,808	8,739,822	9,680,970	43,959,600	5,736,090	62,025,124	4,275,337
18	26,913,360	3,991,970	10,055,460	40,960,790	5,192,270	48,871,205	2,862,374
19	22,355,115	9,099,885	4,184,620	35,639,620	4,099,550	41,929,879	3,574
1820	21,715,168	4,472,322	4,911,050	31,098,549	3,520.880	33,700,988	949,516
1	16,010,990	4,785,280	11,869,900	32,666,170	3,158,360	32,726,123	9,520,760
2	12,478,133	3,494,947	11,057,150	27,030,230	3,674,940	36,645,240	5,356,787
3	13,658,829	4,660,901	10,384,230	28,703,960	3.130,620	34,989,508	759,748
4	14,341,127	4,530,873	13,810,060	32,682,060	2.847,220	38,084,514	4,065,075
5	19,447,588	5,503,742	8,779,100	33,730,430	2.807,890	32,194,233	4,580,919
6	20,573,258	12,345,322	2,459,510	35,378,090	2.974,240	25,163,850	5,896,461
7	18,685,015	4,844,515	10,159,020	33,688,550	2.996,280	28,153,050	2,512,637
8	19,818,777	3,762,493	10,347,290	33,928,560	2.749,710	27,862,750	1,277,784
9	19,736,665	5,648,085	6,835,020	32,219,770	2.794,960	25.607,600	2,271,158
830	20,038,890	4,165,500	9,171,000	33,375.390	2.561,510	27,271,650	
1	19,927,572	5,281,408	8,217,050	33,426,030	2.612,035	27,133,350	
2	18,497,448	5,836,042	5,293,150	29,626,640	2.637,760		
	8	9	10	11	12	13	14

STATEMENT IV., containing Ten of the Appendixes, Nos. 24, 32, 59, 70, 75, 81, 85, 98, 99, and 101, to the Report of the Committee on the Bank of England Charter, in the session of parliament 1832; to which is added the gross receipt of Stamp Duty on Bills of Exchange, see col. 1; the estimated annual amount of the circulation of Country Bankers' Notes, see col. 3; the Coinage in Dollars of all the legal mints of Mexico, and the proportion thereof exported in each of the twenty-three years, 1807-29, see cols. 10 and 11; and of the amount of Gold and Silver Bullion which passed through the Bullion Office of the Bank of England, on account of individuals, in each of the twenty-five years, 1807-31, see cols. 12, 13.

Years.	Gross Receipt of Stamp Duty on Bills of Exchan.	Proportion on Re-issuable Notes, No. 99.	Estimated Annual Circulation of Country Banker's Notes.	Number of Licenses granted to Country Bankers, No. 101.	Commissions of Bankruptcy issued against do. No. 101.	Commercial Bills Discounted, No. 59.	DEPOSITS, Nos. 24 and 32.		Annual Average Circulation of Bank of England Notes, Nos. 78 and 81.	Coinage in Dollars of all the legal Mints of Mexico.	Proportion in Dollars Exported.	Value of Bullion which passed through the Bullion Office of the Bank of England on account of individuals		Total of Gold and Silver Bullion, including the Coin in the possession of the Bank of England, on an average of each of the eighteen years, 1814—1831.	
							Public.	Private.				Gold.	Silver.	Bullion, No 84 & 85.	Coined Gold, No. 75.
	£	£	£			£	£	£	£			£	£	£	£
1807		52,442	18,021,900		1	13,484,600	12,647.551	1,582,720	16,705,903	22,014,700	19,287,710	124,720	2,450,330		
8		108,031	16,871,524		5	12,950,100	11,761,448	1,940,630	17,128,649	21,888,501	11,883,040	492,920	2,070,880		
9		152,205	23,702,493	702	4	15,475,700	11,093,648	1,492,190	18,927,833	26,172,982	21,793,500	785,990	2,017,050		
1810	738,793	99,633	23,893,868	782	20	20,070,600	11,950,047	1,428,720	22,541,523	19,662,221	11,636,872	515,920	1,817,930		
11	679,839	101,941	21,453,000	779	4	14,355,400	10,191,854	1,567,920	23,282,671	14,295,947	7,233,553	848,330	2,408,310		
12	691,044	119,562	19,944,000	825	17	14,291,600	10,390,130	1,573,950	23,237,318	9,411,331	4,034,655	1,413,070	1,310,110		
13	719,897	130,830	22,597,000	922	8	12,330,200	10,393,404	1,771,310	24,023,569	10,540,783	11,283,526	2,414,200	1,858,300		
14	713,838	103,314	22,709,000	940	27	13,285,800	12,158,227	2,374,910	26,927,650	11,230,648	9,276,872	1,918,530	1,928,500	2,179,147	1,631,000
15	841,459	86,900	19,011,000	916	25	14,947,100	11,737,436	1,690,490	26,887,010	8,419,288	8,226,609	2,477,200	3,008,600	3,399,114	1,468,000
16	754,501	83,213	15,096,000	831	37	11,416,400	10,807,660	1,333,120	26,574,840	10,538,491	8,423,534	5,631,900	2,759,300	7,504,284	1,366,000
17	795,940	139,632	15,894,000	752	3	3,960,600	8,699,133	1,672,800	28,274,880	9,937,981	7,659,890	1,075,260	2.074,560	11,109,381	3,311,000
18	845,750	148,314	20,507,000	765	3	4,325,200	7,066,887	1,640,210	27,221,200	12,899,917	4,264,450	337,650	2,928,050	6,721,647	4,805,000
19	738,974	62,329	15,701,338	787	13	6,515,000	4,538,373	1,790,860	25,145,310	13,301,590	6,002,737	691,160	2,892,680	3,969,528	2,957,000
1820	697,506	53,657	10,576,245	769	4	3,883,600	3,713,442	1,325,060	23,920,080	11,586,656	10,104,645	4,530,000	2,891,490	8,174,419	3,162;000
1	691,335	66,961	8,256,180	781	10	2,676,700	3,920,157	1,326,020	21,577,670	8,067,560	10,023,020	7,580,940	1,253,070	11,631,090	4,805,000
2	668,057	62,182	8,416,830	776	9	3,366,700	4,107,853	1,373,370	17,862,890	11,066,950	9,338,357	2,711,380	2,399,690	10,254,698	7,509,000
3	681,881	65,055	9,920.074	779	9	3,123,800	5,526,635	2,321,980	18,629,540	9,458,536	3,391,924	5,425,730	1,105,900	12,606,963	7,575,000
4	723,920	93,277	12,831,332	788	10	2,369,800	7,222,187	2,369,910	20,135,300	9,680,583	6,503,648	1,496,330	1,608,140	11,858,595	6,405,000
5	790,876	114,916	14,930,168	797	37	4,941,500	5,347,314	2,607,900	20,105,030	9,193,686	3,714,354	4,207,070	2,247,880	4,321,702	2,682,000
6	578,815	13,108	8,655,101	809	43	4,908,300	4,214,271	3,332,070	22,251,600	8,608,278	5,925,367	6,173,945	998,122	6,607,976	3,769,000
7	582,098	21,222	9,985,300	668	8	1,240,400	4,223,867	3,931,370	21,512,480	10,619,217	9,669,428	1,860,996	1,241,916	10,201,253	7,987,000
8	531,943	30,443	10,121,476	672	3	1,167,400	3,821,697	5,701,280	21,039,860	9,982,905	12,357,760	2,364,039	2,109,844	9,763,130	7,230,000
9	518,859	26,603	8,130,327	677	3	2,250,700	3,862,656	5,217,210	19,639,979	11,787,133	13,010,020	942,225	2,438,721	7,255,772	5,047,000
1830	493,105	21,741	7,700,000	671	14	919,900	4,761,952	5,562,250	20,491,120			1,649,229	2,523,908	10,320,360	6,761,000
1	504,745	23,601	7.300,000	641	—	1,533,600	3,948,102	5,201,370	18,651,940			793,470	2,144,019	6,405,258	4,772,000
2	1	2	6,500,000	4	5	6	7	8	9	10	11	12	13	14	15

, SAVINGS'. These admirable insti-
m a striking feature in the moral his-
odern Britain. In former times every
institution was exclusively a subscrip-
rich for the benefit of the poor: these,
ily, like their kindred Friendly Socie-
omposed of contributions from among
co-operating for their own benefit, and
that they are promoting primarily their
est. The success of these plans has
rising, considering the peculiar crisis
hey have originated—that of unques-
istress and pressure on all ranks (espe-
middle and lower ranks) of society;
hing of the spirit of undue dependence
d in this country by the poor laws.

ntric but philanthropic Jeremy Butham
st, we believe, who invited the public
to a distinct banking system for the
proposed to establish what he calls
y Bank, so far back as the year 1797,
s Annals of Agriculture. The scheme
ore than the mere deposit of money,
never, as we understand, been acted
t, like most of his projects, it contains
ul hints, and may do good by rebound.
to which it was by him designed to
a remedy were:—

t of physical means of safe custody,
ck-up places; thence, danger of depre-
d accidental loss.

culty of opposing and never-yielding
to the temptations afforded by the in-
of sensual enjoyment, where the means
ing them are constantly at hand.

t of the means of obtaining a profit by
s of the poor, or the use of them in
dapted to their peculiar exigencies.

t of a set of instructions and mementos
at hand, presenting to view the seve-
cies, or sources of demand for money
nd the use of providing it.

t proceeded to sketch the properties
peared to him to be desirable in a sys-
rugality banks, commensurate to the
pulation of the self-maintaining poor.
re,

d, solid and secure.

of provision all-comprehensive.

e of dealing commensurate to the pecu-
lties of each customer.

ns of dealing sufficiently advantageous
tomer.

ces of transacting business suitable;
int of vicinity, and other conveniences.

le of transacting business accommo-

le of operation prompt.

e of book-keeping clear and satisfactory.

the well-known authoress Mrs. Pucilla
projected the first bank that was ever
nstituted for the benefit of the poor at
n. In the Reports of the Society for
the Condition of the Poor, vol. iv., it
or the purpose of providing a safe and
t place of deposit for the savings of
servants, and other poor persons, a cha-
tablishment has been lately formed at
n in the county of Middlesex. It is
guaranteed by six trustees, who are gentlemen of fortune and responsibility, most of them possessing considerable landed property. This renders it as safe and certain as institutions of this kind can be, and insures it from that fluctuation of value to which the public funds are liable. The books are kept by a lady, and never opened but on the first Monday in every month, either for receipts or payments. Any sum is received above 1*s*., and five per cent. is given for every 20*s*. that lies twelve kalender months; every person so depositing money being at liberty to recal it any day the books are opened; but no business is transacted at any other time. The money so collected is divided equally between the six trustees. For every additional £100 a new trustee is to be chosen; so that a trustee can only risk his proportion of £100. None but the laboring classes are admitted to this benefit; and there is no restriction as to place of residence.

'*Observations*.—These few simple rules are all that have hitherto been found necessary for the establishment of this charity. It is not sufficient to stimulate the poor to industry unless they can be persuaded to adopt habits of frugality. The season of plenty should provide for the season of want, and the gains of summer be laid by for the rigors of winter. But it must be obvious how difficult it is for even the sober laborer to save up his money, when it is at hand to supply the wants that occur in his family. For those of intemperate habits, ready money is a very strong temptation to the indulgence of those pernicious propensities. Many would try to make a little hoard for sickness or old age, but they know not where to place it without danger or inconvenience. They do not understand how to put money in, or to take it out of the bank; nor will it answer for small sums, either in point of trouble or of loss of time. The same causes frequently occasion thoughtless servants to spend all their wages in youth, and in consequence to pass their old age in a workhouse.'

In 1807 the Rev. Henry Duncan, minister of West Colder, in Scotland, established in his parish a similar institution, which he described in a pamphlet that exhibits his accurate acquaintance with the difficulties and encouragements of these schemes.

'Those who are at all acquainted with the history of friendly societies,' he well observes, 'must be aware that they owe much of their popularity to the interest excited among the lower orders, by the share to which each of the members is admitted in the management of the institution. The love of power is inherent in the human mind, and the constitution of friendly societies is calculated to gratify this natural feeling. The members find, in the exercise of their functions, a certain increase of personal consequence, which interests their self-love in the prosperity of the establishment. Besides, by thus having constantly before their eyes the operation of the scheme, in all its details, they are more forcibly reminded of its advantages; and not only induced to make greater efforts themselves for obtaining these advantages, but also to persuade others to follow their example. Hence it happens tnat a great number of active and zealous supporters of the institution are always to be found amongst the members of a friendly society, who do more for the success of the establishment than can possibly be effected by the benevolent exertions of individuals in a higher station.' Mr. Duncan therefore found it expedient to give the contributors themselves a share in the management of the institution; and that share was well chosen. The contributors in a body were not fit to be the acting parties; but they were fit to choose those who should act.

'A general meeting is held once a year, consisting of all the members who have made payments for six months, and whose deposits amount to £1. By this meeting are chosen the court of directors, the committee, the treasurer, and the trustee, the functionaries to whom the executive operations are confined: and by the annual meeting also are reviewed and controlled the transactions of the past year, with power to reverse the decisions of the committee and court of directors; and to make new laws and regulations, or alter those already made. The society consists of two sorts of members, the ordinary, and the extraordinary and honorary. The general meetings alone have the power of electing honorary members; but the bank trustee, the lord-lieutenant and vice-lieutenant of the county, the sheriff-depute and his substitute, the members of parliament for the county and burgh, the ministers of the parish, with certain magistrates of the town, are honorary members ex officio; and there are certain regulated subscriptions or donations, of no great amount, which constitute the person paying them, ipso facto, an extraordinary or honorary member. From this list of honorary and extraordinary members the choice of functionaries by the general meeting is annually to be made, provided a sufficient number of them should be disposed to accept of the offices designed; if not, from such of the ordinary members as make deposits to the amount of not less than £2 12*s.* in the year. Deposits are received in sums of 1*s.*, bear interest at the amount of £1; and are always payable at compound interest on a weeks' notice.'

In 1814 the first Edinburgh bank for savings was founded on a modification of the above plan.

The bank for savings at Liverpool was established in the year 1813, by the Society for Bettering the Condition and Increasing the Comforts of the Poor, in the Town and Neighbourhood of Liverpool. 'This establishment was suggested,' says one of the managers, 'by the numerous instances which had come to the knowledge of the society, in which the industrious had lost their savings from the failure of the persons in whose hands they were placed. The committee were anxious to hold out every possible inducement to the lower orders, for depositing their surplus earnings, consistent with a proper prudence and caution. Many gentlemen were of opinion that, in such a town as Liverpool, five per cent. might at all times be obtained on good security; and as the society had an office and clerk of their own, where and by whom the deposits might be received, without any additional expense, it was determined that five per cent. should be the rate of interest given. However no sum was to be entitled to that interest till it had been in the fund for one year at least; if taken out before that period four per cent. only was to be allowed. The bank continued under these regulations till the beginning of 1815, at which period above £900 were deposited in it. We had placed £300 upon mortgage, and the remainder was vested in the navy five per cents. at such prices as to yield more than five per cent. When, however, we found that the fund was likely to increase to a very considerable extent, and that, as we were personally responsible for the money, we should always be liable to the sudden fluctuation of stock, and might, upon any sudden disaster, have a run upon us, which would compel us to sell out, perhaps at a considerable loss, it was determined in future to limit the receipts into the Mechanics Fund to £5 for one individual, and to establish a higher bank, under the name of the Provident Institution, into which the depositors might remove their money when it reached that sum (£5); and where it might be allowed to accumulate to any amount. The principle of the bank is, that every person becomes a proprietor of stock to the amount of his deposit, and shall receive the interest annually, after deducting one-twentieth for the necessary expenses of management. This one-twentieth, together with the farthings, which are not paid, is reserved for the above purpose; and, should any surplus remain at the end of five years, it is to be divided amongst the then existing proprietors. One or more even pounds will be at any time received; but the fractions of pounds must always accumulate in the lower fund. By this means we have reduced the Mechanics' Fund to about £450; the remainder has been transferred to the Provident Institution, and about £1200 have been deposited in addition to it since July last.'

We need not add to these abstracts any account of the almost numberless Saving Banks now existing in the country. Their principle is familiar to all classes, and information on the subject is so easy of access that we do not think it right to occupy our space with any observations of our own. The government have acted the part which became them as to these institutions, and have afforded them the sanction and security which were essential to their permanence and prosperity; and the public mind has caught the impulse to such an extent as is likely to give them a lasting and universal establishment.

We make but two concluding remarks:—1. One of the great advantages of the saving bank over the friendly society is that it has the benefit of survivorship. If the contributor to a saving bank dies, the whole of his contribution remains to his family. If, on the contrary, the member of a benefit society dies, the whole of his property, except the sums ordinarily allowed to the widow, and sometimes to his children, is lost to his family.

2. Another great advantage of saving banks over benefit societies, constituted as these last ordinarily have been, is, that the benefit societies have been the prolific source of contention and immorality; whereas the scheme of saving banks appears liable to no such abuse.

KAFALET, a game of cards played thus:
tting the cards into as many parts as there
yers, every man lays what money he chooses
card; and according to the value of his
bove or below those of the other game-
he dealer wins or loses. The ace of dia-
is the best card; the ace of hearts next;
of clubs after it; then the ace of spades;
of the rest of these suits in order, accord-
their rank. The cheat depends on secu-
ace, or such other sure winning card;
are known to the sharper by some secret

KERS, in antiquity, were called argentarii,
mmularii; by the Greeks *τραπεζιται*, *κολ-*
, and *αργυραμοιβοι*. Their chief business
put out the money of private persons to in-
they had their boards and benches for
pose in all the markets and public places,
hey took in the money from some, to lend
thers. The Romans had two kinds of
, though their office was much more ex-
than that of the bankers among us, theirs
hat of public officers, in whom were united
ctions of a broker, agent, banker, and no-
anaging the exchange, taking in money,
g in buying and selling, and drawing the
s necessary on all these occasions.

KERS, in bricklaying, pieces of timber
n bricks are cut. The banker is six feet
more, according to the number of men
at it, and nine or ten inches square; it
laid on two piers of timber, three feet
m the floor.

KERS, in the court of Rome, are persons
ed, exclusively, to solicit and procure by
orrespondents at Rome, all bulls, dispen-
and other acts despatched at the papal
or in the legateship of Avignon. They
mmon in all the cities of France that had
ment, or a presidial before the revolution;
re erected into a regular and hereditary
by an edict in 1673. They owed their
o the Guelphs, who took shelter at Avig-
d in other cities within the jurisdiction of
e, in the time of the civil wars of Italy.
e heavy extortions they practised towards
ients, soon rendered them odious, and oc-
d several denominations of reproach, as
, caturcini, caursini, corcini, &c. from the
hors, the native place of pope John XXII.
e pontificate they were in their highest

KERS, in seamens' language, vessels em-
in the cod-fishery on the banks of New-
nd.

KING, in architecture, the making of
o oppose the force of the sea, rivers, or the
d secure the land from being overflowed
. With respect to the water which is to
out, this is called banking; with respect
and, which is thereby to be defended, em-
.

KALA, an island in the eastern seas, off
t of Celebes, about twenty miles in cir-
nce. Long. 122° 51′ E., lat. 2° 30′ S.

KAPOUR, or BANCAPOUR, a fortress of
tan, in the Mysore, now dismantled.
Distant 108 miles N. W. of Seringapatam, and sixty S. W. of Bednore.

BANKINSKOI, a town of Siberia, in the environs of Lake Baikal. Long. 117° 14′ E., lat. 51° 11′ N.

BANKMORE, a sand bank in the Irish Sea, one mile south of Pontaferry harbour, in the county of Down.

BANKODANG, a small island in the Eastern Indian sea. Long. 118° 2′ E., lat. 5° 12′ S.

BANKOSSEI, a town of Lower Siam, on the west side of the gulf. Distant seventy miles south of Juthia. Long. 100° 38′ E., lat. 13° 12′ N.

BANKRUPTS, LAWS RESPECTING. The title of the first English statute on this subject, 34 Henry VIII. cap. 4, which is said to be 'against such persons as do make bankrupt,' is a literal translation of the French idiom, qui font banque route. The 3d of Elizabeth followed, all of the provisions of which were incorporated in 1 Jac. I.

A bankrupt, according to these statutes, was considered as a criminal or offender, 1. Jac. I. c. 15. sect. 17; but at present the laws of bankruptcy are regarded as calculated for the general benefit of trade, and being founded on broader views of humanity and justice, confer some privileges not only on the creditors, but also on the bankrupt himself: on the creditors, by compelling the bankrupt to give up all his effects to their use, without any concealment;—and on the debtor, by exempting him from the rigor of other parts of the law, whereby his person might be confined at the discretion of his creditor, though in reality he has nothing to satisfy the debt; and, together with the liberty of his person, affording him, on certain conditions, some pecuniary provision for his future maintenance. In this respect our legislatures seems to have attended to the example of the Roman law. We mean not the terrible law of the XII tables; whereby creditors might cut the debtor's body into pieces, and each of them take his proportionable share: if indeed that law, de debitore in partes secando, is to be understood in so barbarous a light; nor do we mean those less inhuman laws (if they may be called so, as their meaning is indisputably certain), of imprisoning the debtor's person in chains, subjecting him to stripes and hard labor at the mercy of his creditor; and sometimes selling him, his wife, and children, to perpetual foreign slavery trans Tiberim; an oppression which produced so many popular insurrections, and secessions to the mons sacer. Laws equally barbarous are quoted by Blackstone, as existing in Pegu, and the adjacent countries of the East, where the creditor is entitled to dispose of the debtor himself, and likewise of, or appropriate, his wife and children: though indeed by doing so, the debt is understood to be discharged. But we mean the law of cession introduced by the Christian emperors; whereby if a debtor ceded or yielded up all his fortune to his creditors, he was secured from imprisonment, 'omni quoque corporali cruciatu semoto.' For, as the emperor justly observes, 'inhumanum erat spoliatum fortunis suis in solidum damnari.' Thus far was just and reasonable; but, as the departing from one extreme is apt to produce its opposite, we find it afterwards enacted, that if the debtor, by any unforeseen accident, was reduced to low circumstances, and would swear that he had not sufficient left to pay his debts, he should not be compelled to cede or give up even that which he had in his possession; a law which, under a false notion of humanity, seems to be fertile of perjury, absurdity, and injustice. The laws of England, more wisely, have steered between these extremes: providing at once against the inhumanity of the creditor, who is not suffered to confine an honest bankrupt after his effects are delivered up; and at the same time taking care that all his just debts shall be paid, so far as the effects will extend. But still they are cautious of encouraging prodigality and extravagance by this indulgence to debtors: and therefore they allow the benefit of the laws of bankruptcy to none but actual traders; since that set of men are, generally speaking, the only persons liable to accidental losses, and to an inability of paying their debts, without any fault of their own. If persons in other situations of life run in debt without the power of payment, they must take the consequences of their own indiscretion, even though they meet with sudden accidents that may reduce their fortunes; for the law holds it to be an unjustifiable practice, for any person but a trader to encumber himself with debts of any considerable value. If a gentleman, or one in a liberal profession, at the time of contracting his debts, has a sufficient fund to pay them, the delay of payment is a species of dishonesty, and a temporary injustice to his creditor; and if, at such a time, he has not sufficient fund, the dishonesty and injustice is the greater. He cannot, therefore, murmur, if he suffer the punishment which he has voluntarily drawn upon himself. But in mercantile transactions, the case is far otherwise. Trade cannot be carried on without mutual credit on both sides; the contracting of debts is therefore here not only justifiable but necessary. And if by accidental calamities, as by the loss of a ship in a tempest, the failure of brother traders, or by the non-payment of persons out of trade, a merchant or trader becomes incapable of discharging his own debts, it is his misfortune and not his fault. Such is the spirit of our law: which has been rendered more simple in the mode of its execution of late by the comprehensive statute 6 Geo. IV. cap. 16. which, repealing the greater part of the former statutes on this subject, dictates a line of practice which may be conveniently considered under, 1. Who may become bankrupts. 2. What is an act of bankruptcy. 3. Proceedings thereon up to, and inclusive of the meetings of creditors. 4. Effects to the bankrupt and his creditors.

I. *Persons who may become bankrupts* are defined to be, all bankers, brokers, and persons using the trade or profession of a scrivener, receiving other men's monies or estates into their trust or custody, and persons insuring ships or their freight, or other matters, against perils of the sea, warehousemen, wharfingers, packers, builders, carpenters, shipwrights, victuallers, keepers of inns, taverns, hotels, or coffee-houses, dyers, printers, bleachers, fullers, calenderers, cattle or sheep salesmen, and all persons using the trade of merchandise by way of bargaining, exchange, bartering, commission, consignment or otherwise, in gross or by retail; and all persons who, either for themselves or as agents or factors for others, seek their living by buying and selling, or by buying and letting for hire, or by the workmanship of goods or commodities, shall be deemed traders liable to become bankrupt: Provided that no farmer, grazier, common laborer, or workman for hire, receiver-general of the taxes, or member of or subscriber to any incorporated commercial or trading companies, established by charter or act of parliament, shall be deemed, as such a trader, liable to become bankrupt.

II. *An act of bankruptcy* is committed. 1. 'If any trader shall depart this realm, or being out of this realm shall remain abroad, or depart from his dwelling-house, or otherwise absent himself, or begin to keep his house, or suffer himself to be arrested for any debt not due, or yield himself to prison, or suffer himself to be outlawed, or procure himself to be arrested, or his goods, money, or chattels, to be attached, sequestered, or taken in execution, or make or cause to be made, either within this realm or elsewhere, any fraudulent grant or conveyance of any of his lands, tenements, goods, or chattels, or make or cause to be made any fraudulent surrender of any of his copyhold lands or tenements, or make or cause to be made any fraudulent gift, delivery, or transfer of any of his goods, or chattels; every such trader doing, suffering, procuring, executing, permitting, making, or causing to be made any of the acts, deeds, or matters aforesaid, with intent to defeat or delay his creditors, shall be deemed to have thereby committed an act of bankruptcy.

2. But where any trader shall execute any conveyance or assignment, by deed, to a trustee or trustees, of all his estate and effects for the benefit of all the creditors of such trader, the execution of such deed shall not be deemed an act of bankruptcy, unless a commission issue against such trader within six calender months from the execution thereof, provided that such deed shall be executed by every such trustee within fifteen days after the execution thereof by the said trader; and that the execution by such trader and by every such trustee be attested by an attorney or solicitor; and that notice be given within two months after the execution thereof by such trader in the London Gazette, and two London daily newspapers; or in case the trader does not reside within forty miles of London, in the London Gazette and in one London daily newspaper and one provincial newspaper, published near to such trader's residence, such notice containing the date and execution of such deed, and the name and place of abode respectively of every such trustee, and of such attorney or solicitor.

3. Other acts of bankruptcy are lying in prison for debt twenty-one days; escaping out of prison or custody; or, which is the most novel and important feature of this act,—If any trader shall file in the office of the Lord Chancellor's secretary of bankrupts, a declaration in writing, attested by an attorney or solicitor, that he is insolvent, or unable to meet his engagements, the secretary of bankrupts or his deputy is then to sign a memorandum

randum that such declaration hath been filed, which is authority for the printer of the London Gazette to insert an advertisement of such declaration therein; and every such declaration shall, after the advertisement inserted, become an act of bankruptcy committed by such trader at the time when such declaration was filed: but no commission can issue thereupon, unless it be sued out within two calender months next after its insertion, nor unless such advertisement shall have been inserted in the London Gazette within eight days after such declaration was filed; and no docket can be struck upon such act of bankruptcy before the expiration of four days next after insertion of such advertisement, in case such commission is to be executed in London, or before the expiration of eight days next after such insertion, in case such commission is to be executed in the country.

A further provision upon this point, and which seems designed to encourage a settlement of insolvents' affairs in this way is, That no commission under which the adjudication shall be grounded on the act of bankruptcy being the filing of such declaration, shall be deemed invalid by reason of such declaration having been concerted or agreed upon between the bankrupt and any creditor or other person.

If any trader having privilege of parliament shall commit any act of bankruptcy, a commission of bankrupt may issue against him, and the commissioners and all other persons acting under such commission, may proceed thereon in like manner as against other bankrupts, only such person shall not be subject to be arrested or imprisoned during his privilege, except in cases made felony by this act.

III. *Proceedings hereupon.* 1. The Lord Chancellor has power upon petition stating to him in writing that any trader has committed any act of bankruptcy, by any creditor or creditors of such trader; if one being a creditor for £100, if two for £150, and if three being creditors for £200; by commission under the great seal, to appoint such persons as to him shall seem fit, to have full power and authority to take such order and direction, with the body of the bankrupt, as herein after mentioned, as also with all his lands, tenements, and hereditaments, both within the realm and abroad, which he shall have in his own right before he became bankrupt, as also with all such interest in any such lands, tenements, and hereditaments as such bankrupt may lawfully depart with all, and with all his money, fees, offices, annuities, goods, chattels, wares, merchandise, and debts, wheresoever they may be found or known, and to make sale thereof, &c. for satisfaction and payment of the creditors.

The petitioning creditor must prosecute a commission at his own costs, until the choice of assignees; or the commissioners may appoint temporary assignees. Any creditor or creditors whose debt or debts is or are sufficient to entitle him or them to petition for a commission against all the partners of any firm, may petition for a commission against one or more partners of such firm, and every commission issued upon such petition shall be valid although it does not include all the partners of the firm, and in every commission against two or more persons it shall be lawful for the Lord Chancellor to supersede such commission as to one or more of such persons, and the validity of such commission shall not be thereby affected as to any person as to whom such commission is not ordered to be superseded, nor shall any such person's certificate be thereby affected. Auxiliary commissions for the proof of debts or examination of witnesses may also be issued by the chancellor. But the examinations are to be annexed to the original commission.

2. The commissioners take oath impartially and honestly to execute their office; and they take a fee of twenty shillings for every meeting and for the signature of every deed and conveyance, and the bankrupt's certificate. The first duty is, upon proof made before them of the petitioning creditor's debt or debts, and of the trading and act or acts of bankruptcy of the person or persons against whom such commission is issued, to adjudge such person or persons bankrupt. Then the commissioners 'shall forthwith cause notice of such adjudication to be given in the London Gazette, and shall thereby appoint three public meetings for the bankrupt to surrender and conform, the last of which meetings shall be on the forty-second day hereby limited for such surrender.' No commission shall abate by reason of a demise of the crown, and (if by reason of the death of commissioners, or for any other cause, it becomes necessary) any commission may be renewed, but only half the fees usually paid upon obtaining commissions shall be paid for the same; and if any bankrupt shall die after adjudication, the commissioners may proceed in the commission as they might have done if he were living.

3. The messenger of the commissioners may break open the bankrupt's doors, &c. and seize upon his body or property; and if the bankrupt be in prison or in custody, it shall be lawful for the person so appointed as aforesaid to seize any property (his necessary wearing apparel only excepted) in the custody or possession of such bankrupt, or of any other person, in any prison or place where such bankrupt is in custody. But, in ordinary cases, the messenger proceeds quietly to enter on the bankrupt's premises, and take possession of his goods. The commissioners are empowered to summon persons suspected of having bankrupt's property in their hands, &c.; and compel them to produce books, &c. under pain of being committed to prison without bail. They may even summon the bankrupt's wife. And the concealment of his effects subjects other parties to a fine of £100.

4. At the three several meetings appointed by the commissioners, and at every other meeting by them appointed for proof of debts (whereof, and of the purport whereof, ten days notice shall have been given in the London Gazette), every creditor of the bankrupt may prove his debt by his own oath; and all bodies politic and public companies incorporated or authorised to sue or bring actions, either by charter or act of parliament, may prove by an agent, provided such agent shall in his deposition swear that he is such

agent, and that he is authorised to make such proof; and if any creditor shall live remote from the place of the meeting of the commissioners, he may prove by affidavit, sworn before a master in chancery, ordinary or extraordinary; or if such creditor shall live out of England, by affidavit sworn before a magistrate where such creditor shall be residing, and attested by a notary public, British minister, or consul: and no creditor shall pay any contribution on account of any such debt; provided, that it shall be lawful for the said commissioners to examine upon oath, either by word of mouth or by interrogatories in writing, every person claiming to prove a debt under the said commission, or to require such further proof, and to examine such other persons in relation thereto, as they shall think fit. Bonâ fide creditors are admitted to prove a debt notwithstanding any secret act of bankruptcy, before it was contracted, and, as special debts, the commissioners may order six months wages of servants or clerks to be paid in full; but of more than six months' wages, the residue must be proved as an ordinary debt; and debts not payable at the time of the bankruptcy may be proved, deducting rebate of interest; and the actual interest due on bills of exchange, &c. at the date of the commission. Sureties and persons liable for the debts of bankrupts can only prove, after having paid such debts. The value of annuities, however, may be calculated and proved; but other debts contingent at the time of the bankruptcy, are provable after the happening of the contingency. The commissioners may convey the personal estate, debts due to the bankrupt, and all his property to the assignees.

5. At the second meeting appointed by the commissioners, or any adjournment thereof, the assignees of the bankrupt's estate and effects are chosen; and all creditors who have proved debts under the commission to the amount of ten pounds and upwards entitled to vote in such choice; and also any person authorised by letter of attorney from any creditor or creditors, upon proof of the execution thereof, either by affidavit sworn before a master in chancery, ordinary or extraordinary, or by oath before the commissioners viva voce; and that the commissioners having power to reject any person so chosen who shall appear to them unfit to be such assignee, and upon such rejection a new choice of another assignee or assignees shall be made. And a joint creditor is entitled to prove under a separate commission, for the purpose of voting in the choice of assignees.

6. If any person against whom any commission has been issued, or shall hereafter be issued, whereupon such person hath been or shall be declared bankrupt, shall not, before three of the clock upon the forty-second day after notice thereof in writing to be left at the usual place of abode of such person, or personal notice in case such person be then in prison, and notice given in the London Gazette of the issuing of the commission, and of the meetings of the commissioners, surrender himself to them, and sign or subscribe such surrender, and submit to be examined before them, from time to time, upon oath, or, being a Quaker, upon solemn affirmation; or if any such bankrupt upon such examination shall not discover all his real or personal estate, and how and to whom, upon what consideration, and when he disposed of, assigned, or transferred any of such estate, and all books, papers, and writings relating thereunto (except such part as shall have been really and bonâ fide before sold or disposed of in the way of his trade, or laid out in the ordinary expense of his family); or if any such bankrupt shall not upon such examination deliver up to the commissioners all such part of such estate, and all books, papers, and writings relating thereunto, as be in his possession, custody, or power, (except the necessary wearing apparel of himself, his wife and children); or if any such bankrupt shall remove, conceal, or embezzle any part of such estate, to the value of £10 or upwards, or any books of account, papers, or writings relating thereto, with intent to defraud his creditors, every such bankrupt shall be deemed guilty of felony, and be liable to be transported for life, or for such term, not less than seven years, as the court before which he shall be convicted shall adjudge, or shall be liable to be imprisoned only, or imprisoned and kept to hard labor in any common gaol, penitentiary house, or house of correction, for any term not exceeding seven years. But the lord chancellor, or the commissioners have power, as often as they shall think fit, from time to time, to enlarge the time for the bankrupt surrendering himself, so as every such order be made six days at least before the day on which such bankrupt was to surrender himself; and an allowance is to be made to the bankrupt for his maintenance, out of his estate, until he shall have passed his examination. The bankrupt shall also be free from arrest or imprisonment by any creditor in coming to surrender; and after such surrender during the said forty-two days, and such further time as shall be allowed him for finishing his examination, provided he was not in custody at the time of such surrender; and if such bankrupt shall be arrested for debt, or on any escape warrant in coming to surrender, or shall after his surrender be so arrested within the time aforesaid, he shall, on producing the summons under the hands of the commissioners to the officer who shall arrest him, and giving such officer a copy thereof, be immediately discharged; and if any officer shall detain any such bankrupt after he shall have shown his summons to him, so signed as aforesaid, such officer shall forfeit to such bankrupt, for his own use the sum of £5 for every day he shall detain such bankrupt, to be recovered by action of debt in any court of record at Westminster, in the name of such bankrupt, with full costs of suit.

IV. *The effects of these provisions with regard to the bankrupt and his creditors* are, 1. All previous conveyances of property, made while he was insolvent, become void (except upon marriage of his children or for some valuable consideration).

2. He is no longer entitled to leases, or agreements for leases, nor liable for rents or covenants; but his assignees may elect to abide by or abandon a lease or agreement, and execute all powers previously vested in bankrupts. But

ıveyances by, and all contracts and other
gs and transactions by and with any bank-
onâ fide made and entered into more than
lendar months before the date and issuing
commission against him, and all execu-
ınd attachments against the lands and tene-
or goods and chattels of such bankrupt,
fide executed or levied more than two ca-
months before the issuing of such commis-
hall be valid, notwithstanding any prior
bankruptcy by him committed; provided
rson or persons so dealing with such bank-
r at whose suit or on whose account such
ion or attachment shall have issued, had
the time of such conveyance, contract,
, or transaction, or at the time of execut-
levying such execution or attachment, no-
any prior act of bankruptcy by him com-
: payments made by and to the bankrupt
t notice, are valid, notwithstanding an act
kruptcy. And no person or body corpo-
r public company, having in his or their
ion or custody any money, goods, wares,
ndises, or effects belonging to any bank-
all be endangered by reason of the pay-
r delivery thereof to the bankrupt or his
provided such person or company had
he time of such delivery or payment, no-
t such bankrupt had committed an act of
ptcy.

very bankrupt who shall have duly sur-
d and conformed himself to the laws in
oncerning bankrupts at the time of issuing
mission against him, shall be discharged
l debts due by him when he became bank-
d from all claims and demands provable
he commission, in case he shall obtain a
te of such conformity, so signed and al-
and subject to such provisions as herein-
irected; but no such certificate shall
or discharge any person who was partner
ch bankrupt at the time of his bankruptcy,
was then jointly bound, or had made any
ntract with such bankrupt. Such certifi-
ll be signed by four-fifths in number and
f the creditors of the bankrupt, who shall
roved debts under the commission to the
of twenty pounds or upwards, or after
ndar months from the last examination of
krupt, then either by three-fifths in num-
d value of such creditors, or by nine-
in number of such creditors, who shall
testify their consent to the said bank-
discharge as aforesaid; and no such cer-
shall be such discharge, unless the
sioners shall in writing, under their
and seals, certify to the Lord Chancellor
ch bankrupt has made a full discovery of
e and effects, and in all things conformed
said, and that there does not appear any
to doubt the truth or fulness of such dis-
and also that the creditors have signed in
hereby directed, and unless the bankrupt
ath in writing that such certificate and
were obtained without fraud, and unless
rtificate shall, after such oath, be allowed
Lord Chancellor, against which allowance
the creditors of the bankrupt may be heard
the Lord Chancellor. But the commissioners shall not sign any certificate unless they shall have proof, by affidavit in writing, of the signature of the creditors thereto, or of any person thereto authorised by any creditor, and of the authority by which such person shall have so signed the same; and if any creditor reside abroad, the authority of such creditor shall be attested by a notary public, British minister, or consul; and every such affidavit, authority, and attestation, shall be laid before the Lord Chancellor, with the certificate, previous to the allowance thereof.

Any contract or security made or given by any bankrupt or other person unto or in trust for any creditor, or for securing the payment of any money due by such bankrupt at his bankruptcy, as a consideration or with intent to persuade such creditor to consent to, or sign such certificate, shall be void, and the money thereby secured or agreed to be paid shall not be recoverable, and the party sued on such contract or security may plead the general issue, and give this act and the special matter in evidence. And, finally, any bankrupt who shall, after this certificate shall have been allowed, be arrested, or have any action brought against him for any debt, claim, or demand, hereby made provable under the commission against such bankrupt, shall be discharged upon common bail, and may plead in general that the cause of action accrued before he became bankrupt, and may give this act and the special matter in evidence, and such bankrupt's certificate, and the allowance thereof, shall be sufficient evidence of the trading, bankruptcy, commission, and other proceedings precedent to the obtaining such certificate; and if any such bankrupt shall be taken in execution, or detained in prison for such debt, claim, or demand, where judgment has been obtained before the allowance of his certificate, it shall be lawful for any judge of the court wherein judgment has been so obtained, on such bankrupt's producing his certificate, to order any officer who shall have such bankrupt in custody by virtue of such execution, to discharge such bankrupt without exacting any fee, and such officer shall be hereby indemnified for so doing.

It is nevertheless provided that if any person who shall have been so discharged by such certificate as aforesaid, or who shall have compounded with his creditors, or who shall have been discharged by any insolvent act, shall be or become bankrupt, and have obtained or shall hereafter obtain such certificate as aforesaid, unless his estate shall produce (after all charges) sufficient to pay every creditor under the commission fifteen shillings in the pound, such certificate shall only protect his person from arrest and imprisonment, but his future estate and effects (except his tools of trade and necessary household furniture, and the wearing apparel of himself, his wife and children), shall vest in the assignees under the commission.

A scale of allowance on the other hand is made for every bankrupt who shall have obtained his certificate, if the net produce of his estate shall pay the creditors who have proved under the commission ten shillings in the pound; in which case he shall be allowed five per cent out of such produce, to be paid him by the assignees, provided such allowance shall not exceed four hundred pounds; and every bankrupt, if such produce shall pay such creditors twelve shillings and sixpence in the pound, shall be allowed and paid as aforesaid seven pounds ten shillings per cent., provided such allowance shall not exceed five hundred pounds; and every bankrupt, if such produce shall pay such creditors fifteen shillings in the pound or upwards, shall be allowed and paid as aforesaid ten pounds per cent., provided such allowance shall not exceed six hundred pounds; but if such produce shall not pay such creditors ten shillings in the pound, such bankrupt shall only be allowed and paid so much as the assignees and commissioners shall think fit, not exceeding three pounds per cent. and three hundred pounds.

As to the important point of making dividends, the commissioners shall, not sooner than four nor later than twelve calendar months from the issuing the commission, appoint a public meeting (whereof, and of the purport whereof, they shall give twenty-one days notice in the London Gazette), to make a dividend of the bankrupt's estate, at which meeting all creditors who have not proved their debts shall be entitled to prove the same; and the said commissioners at such meeting shall order such part of the net produce of the bankrupt's estate in the hands of the assignees, as they shall think fit, to be forthwith divided amongst such creditors as have proved debts under the commission, in proportion to their respective debts, and shall make an order for a dividend in writing under their hands, and shall cause one part of such order to be filed amongst the proceedings under the commission, and shall deliver another part thereof to the assignees, which order shall contain an account of the time and place of making such order, of the amount of the debts proved, of the money remaining in the hands of the assignees to be divided, of how much in the pound is then ordered to be paid to every creditor, and of the money allowed by the commissioners to be retained by the assignees, with their reasons for allowing the same to be so retained; and the assignees, in pursuance of such order (and without any deed of distribution made for that purpose), shall forthwith make such dividend, and shall take receipts in a book to be kept for that purpose from each creditor, for the dividend received by such creditor; and such order and receipt shall be a discharge to every such assignee for so much as he shall pay pursuant to such order; and no dividend shall be declared, unless the accounts of the assignees shall have been first so audited as aforesaid, and such statement delivered by them upon oath as aforesaid.

No creditor having security for his debt, or having made any attachment in London, or any other place, by virtue of any custom there used, of the goods and chattels of the bankrupt, shall receive upon any such security or attachment more than a rateable part of such debt, except in respect of any execution or extent served and levied, by seizure upon, or any mortgage of or lien upon any part of the property of such bankrupt before the bankruptcy; provided that no creditor, though for a valuable consideration, who shall sue out execution upon any judgment obtained by default, confession, or nil dicit, shall avail himself of such execution to the prejudice of other fair creditors, but shall be paid rateable with such creditors.

If the bankrupt's estate shall not have been wholly divided upon the first dividend, the commissioners shall, within eighteen calendar months after the issuing of the commission, appoint a public meeting (whereof, and of the purport whereof, they shall give twenty-one days notice in the London Gazette), to make a second dividend of the bankrupt's estate, when all creditors who have not proved their debts may prove the same; and the commissioners at such meeting, after taking such audit as herein-before directed, shall order the balance in the hands of the assignees to be forthwith divided amongst such of the creditors as shall have proved their debts; and such second dividend shall be final, unless any action at law or suit in equity be depending, or any part of the estate be standing out, not sold or disposed of, or unless some other estate or effects of the bankrupt shall afterwards come to the assignees, in which case they shall, as soon as may be, convert such estate and effects into money, and within two calendar months after the same shall be so converted, divide the same in manner aforesaid.

Lastly, if any assignee, under any commission of bankrupt, shall have, either in his own hands or at any banker's, or otherwise subject to his order or disposition, or to his knowledge in the hands of, or in the order and disposition of himself and any co-assignee or co-assignees, or of any or either of them, any unclaimed dividend or dividends, amounting in the whole to the sum of fifty pounds, and shall not within six months after this act shall have taken effect, or two calendar months after the expiration of one year after the declaration and order of payment of such dividend or dividends made by the commissioners, either pay to the creditor or creditors entitled thereto, or cause a certificate thereof to be filed in the office of the Lord Chancellor's secretary of bankrupts, containing a full and true account of the name or names of the creditor or creditors to whom such unclaimed dividend or dividends is or are respectively due, and of the amount of such dividend or dividends respectively (such account being signed by the assignee or assignees rendering the same, and attested by the solicitor to the commission, or the solicitor to the assignee or assignees signing the same), such assignee or assignees shall be charged, in account with the estate of the bankrupt, interest upon such unclaimed dividend or dividends, to be computed from the time that such certificate is hereby directed to be filed, at the rate of five pounds per centum per annum, for such time as he shall thenceforth retain the same, and also such further sum as the commissioners shall think fit, not exceeding in the whole twenty pounds per centum per annum; and the Lord Chancellor, or the said commissioners, may order the investment of any unclaimed dividends in the public funds, or in any government security for or on account of the creditors entitled, and subject to such order as the Lord Chancellor may think fit to make respecting the same, who, if he shall think fit, may, after the same shall have remained unclaimed for the space of three years from the declaration of such dividends by the commissioners, order the same to be divided amongst and paid to the other creditors, and the proof of the creditors to whom such dividends were allotted shall from thenceforth be considered as void as to the same, but renewable as to any future dividends, to place them pari passu with the other creditors, but not to disturb any dividends which shall have been previously made.

We have thus fully stated the general provisions of the late act, as useful to all persons connected with trade; more minute provisions will of course engage the attention and require the aid of professional men.

BANKS, Cape, the north-east point of Botany Bay, on the east coast of New Holland.

Banks' Island, an island of New Zealand, off the north-east coast of Tavai Poenammoo. It is about sixty miles in circumference, and sufficiently high to be visible at the distance of twelve or fifteen leagues. It is barren but inhabited. Distant fifteen miles from Tavai Poenammoo. The south point lies in long. 186° 30′ W., latitude 43° 32′ S. Also, an island in the North Pacific, near the west coast of North America, about sixty miles long, and five broad. Long. 129° 45′ to 130° 10 W., lat. 50° 30′ N.

Banks' Port, a harbour on the north-west coast of America, south-east from Cape Edgecumbe, and north-west from Sea Otter Sound.

Banks (Sir John), Lord Chief Justice of the Common Pleas, in the reign of Charles I., was born at Keswick, in Cumberland, in 1589. He studied at Oxford, but took no degree: applying to the law, his extraordinary reputation in that profession soon recommended him to the king, who made him attorney to the prince in 1629; knighted him, and appointed him attorney-general in 1634; lord chief justice in 1640; and a member of the privy council in 1642. In these perilous times, he discharged the duties of his important and arduous offices with very general approbation. But at last lost his popularity, by declaring from the bench, in the summer circuit, that the actions of Essex, Manchester, and Waller, were treasonable; and the Commons voted him a traitor. Meantime his lady, being with her family at his seat at Corfe Castle, in the isle of Purbeck, was summoned to surrender by the friends of the parliament; but refused, though she had then only five men in the castle, and sustained a siege, by William Earl, with not more than forty men. At last lady Banks was relieved by the arrival of lord Caernarvon with a body of horse. Sir John continued with the king at Oxford till 1644, when he died.

Banks (John), an English author, born at Sunning, in Berkshire in 1709. He was bred a weaver at Reading, but gave up that business and went to London, where he became a bookseller. Not succeeding in this, he published various tracts, particularly a Critical Review of the Life of Oliver Cromwell, which met with a favorable reception. He died in 1751.

Banks (Thomas), an eminent English sculptor, was born in 1735, and was son of Mr. William Banks, steward of the duke of Beaufort. He was educated with Kent, the well-known architect of that period; but afterwards, showing a preference for sculpture, studied it at the Royal Academy with great success, and was elected to be sent as one of its students to Italy. Here he executed several good pieces, particularly a basso-relievo of Caractacus, in the possession of the duke of Buckingham; and a Cupid catching a butterfly, which was afterwards purchased by the empress Catharine. He went from Italy to Russia, where he staid two years, and returned to his own country to acquire both fame and fortune. Among his works are a colossal statue exhibiting Achilles mourning the loss of Brisëis, in the hall of the British Institution; and the monument of Sir Eyre Coote, in Westminster Abbey. Mr. Banks was elected a member of the Royal Academy not long after his return from Russia, and finished his useful life in February 1805.

Banks (Sir Joseph), the late celebrated naturalist, was the son of William Banks, Esq. of Revesby Abbey, Lincolnshire, where he was born in 1743. He received his education at Eton and Oxford, where he continued till the death of his father. In 1765 he made a voyage to Newfoundland and Labrador, for the purpose of making researches relative to natural history; and in 1763 embarked with his friend, Dr. Solander, in the first voyage round the world made by the great captain Cook. In the course of this expedition Mr. Banks, in traversing the rocks of Terra del Fuego, narrowly escaped perishing from intense cold. In consequence of a misunderstanding with captain Cook, he did not join, as he intended, in the expedition of 1772; but the same year undertook a voyage to the Western Isles of Scotland and to Iceland, in the course of which he made important additions to our knowledge of those regions. About this time he received the compliment of a diploma of LL. D. from his alma mater. In 1778 he was made a baronet and elected president of the Royal Society. Some unpleasant dissentions, which arose in the society not long after, were almost the only circumstances which occurred to interrupt his tranquillity. These, however, subsided, and the remainder of his life was passed amongst scientific associates, and the prosecution of researches connected with natural history. His house was always open to the learned world. He died June 19, 1820, at his seat at Spring Grove, Middlesex. The published writings of Sir Joseph Banks are neither numerous nor important. They consist of papers in the Philosophical Transactions, the Archæologia, the Transactions of the Horticultural Society, and other periodical works; and a small tract, entitled A Short Account of the Causes of the Diseases in Corn, called by Farmers the Blight, the Mildew and the Rust, with plates. London, 1803, 4to. This impression was only for private distribution; but an edition in 8vo. was published in 1805. Sir Joseph possessed a noble library of works on natural history, of which an admirable catalogue, in five vols. 8vo. was compiled by his librarian, Mr. Dryander.

Banks-Brae, a hill of Scotland, in Renfrewshire, on the south-west border of the parish of Kilbarchan, beautifully adorned with plantations.

BANKSIA, in entomology, a species of papilio, (nymph), with angulated wings; brown above, with a yellowish disk. Fabricius. It is a native of New Holland, and the papilio ismene of Cramer.

Banksia, in botany, a genus of the monogynia order, and tetandria class of plants. The amentum is scaly, the corolla consists of four petals. The antheræ are in the cavity of the folds and sessile; the capsule is bivalvular; and the seed is solitary, and bipartite. There are four principal species, viz. 1. B. dentata; 2. B. ericæfolia; 3. B. integrifolia; 4. B. serrata; all natives of New Holland. See Mr. Brown's Transactions of the Linnæan Society, vol. x. p. 202; and Commentaries to the Hortus Kewensis, vol. i. p. 213.

Banksia Abyssinica, a beautiful Abyssinian tree, so named by Bruce.

BANKSII, a species of scarabæus melontha; described by Fabricius, from a specimen in the museum of Sir Joseph Banks. The head and thorax are black; wing-cases villose, and legs testaceous; abdomen short and retuse.

Banksii, a species of cimex (reduvius), that inhabits India. It is rufous above, with black wings; abdomen deep black; border rufous.

Banksii, a species of chrysomela that inhabits Calabria. It is brassy above, beneath testaceous.

Banksii, a species of cerambyx (lamia), that is found at the Cape of Good Hope. It is of a grayish color; thorax slightly spined; wing-cases speckled with ferruginous, and marked with two cinereous bands.

BANLEUGA, Banileu, or Bannileuga, in writers of the middle age, the territory within which the jurisdiction of municipal magistrates, or ordinary judges of a city, town, or the like, is confined: so called, because within this tract they make their proclamations, prohibitions, and other acts of justice and policy, comprised under the name of ban or bannum.

BANMORE, Eilan Nan, Gael. i.e. the island of great women; the ancient name of the island of Eigg.

BANN, from the Brit. ban, i.e. clamor, a proclamation, public notice, command, or prohibition.

Bann, in ancient jurisprudence, denoted proscription or banishment for a crime proved; because anciently published by sound of trumpet; or, as Vossius thinks, because those who did not appear at the above-mentioned summons, were punished by proscription. Hence, to put a prince under the bann of the empire, is to declare him divested of all his dignities. The sentence denotes an interdict of all intercourse and offices of humanity with the offender; the form of which seems taken from that of the Romans, who banished persons by forbidding them the use of fire and water. Sometimes also cities were put under the imperial bann; that is, stripped of their rights and privileges. The word also denotes a pecuniary mulct, or penalty, laid on a delinquent for offending against a bann.

Bann, in military affairs, a proclamation made in the army by beat of drum, sound of trumpet, &c. requiring the strict observance of discipline, either for the declaring a new officer, or punishing an offender.

Bann, a river of Ireland, descending from the north of the mountains of Mourne, and flowing north-west into the Lough Neagh: again issuing from the north side of that lake, it passes Coleraine, and enters the sea a few miles east of Lough Foyle. Its course, including the lough, is about seventy miles; and, with the canal of Newry, which joins it to the Irish sea, it makes the north-east portion of Ireland a peninsula.

Bann, or Bannus, a title anciently given to the governor or viceroy of Croatia, Dalmatia, and Sclavonia.

Bann, Episcopal, bannus episcopalis, a mulct paid to the bishop by those guilty of sacrilege and other crimes.

Bann of Harvest, or Vintage, &c. in the ci-devant French customs, imported a prohibition to reap, or gather the grapes, without the leave of the lord.

Banns of Marriage are solemn notices of matrimonial contracts, made in the parish-church before marriage; that if there be any objections to either party as to prior engagements, &c. there may be an opportunity of making them.

The publication of banns, popularly called asking in the church, was intended to prevent clandestine marriages: but a licence may be obtained for the marriage, and then this ceremony is omitted: but ministers are not to celebrate matrimony between any persons without a licence, except the banns have been first published three several times upon pain of suspension, &c. The use of matrimonial banns is said to have been first introduced in the Gallican church, though something like it obtained even in the primitive times: and it is this that Tertullian is supposed to mean by trinundina promulgatio. The council of Lateran first extended and made the usage general. By the ordinance of Blois, no person could validly contract marriage, without a preceding proclamation of three banns; nor could any person whatever be exempt except for the two last.

Banns, Papal, solemn anathemas, or excommunications, attended with curses, &c.

BANNAGHER, or Banagher, a town of Ireland, in King's county, Leinster, on the Shannon, fifteen miles south of Athlone.

BANNALEC, a town of Brittany, France, department of Finisterre, arrondissement of Quimperlé, the head of a canton; has 4700 inhabitants. It is four miles from Rosporden and six from Quimperlé.

BANNALIS Mola, or Bannal Mill, a kind of feudal service, whereby the tenants of a district are obliged to carry their corn to be ground at a certain mill, or to be baked at a certain oven, for the benefit of the lord. This in Scotland is called thirlage.

BANNEC, an island in the English channel, near the coast of France. Long. 4° 55. W., lat. 48° 25′ N.

ER,
ED,
ET,
OL. } Fr. *banniere*, Ital. *banda*, *bandiera*, Ger. *banner*, Swed. *baner*, Dut. *baniere*. In old Sax. bansegn is the ensign or banner.
dvo, *signum*; *bandvjan*, *significare*.
or more properly *banderol*, is derived
rolle, Fr. Spenser writes it *bannerall*;
ld Fr. is *banneralle*. The *banner*,
r *bansegn*, is probably the sign of
ch fastened to a pole, may be furled
ed at pleasure, like a roll of canvass
d which armies and other bodies of
e as a standard, which distinguishes
nd cause which they have espoused,
nmon purpose to which they have
nselves. 'We find (say the writers
yclopædia Britannica), a multiplicity
concerning the etymology of the word
me deriving it from the Latin *bandum*,
flag; others from the word *bann*, to
e vassals to appear in arms; others
the German *ban*, a field or tenement,
ded men alone were allowed a ban-
nally, there are some who think it is a
of *panniere*, from *pannus*, cloth; be-
ers were originally made of cloth.

a *banner* upon the high mountains.
Isaiah

o tryumphé! O great beautie's queen,
e the *banner* of thy conquest hie.
Spenser.

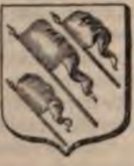
nce there comes a power who already
spies in some of our best ports,
point to shew their open *banner*.
Shakspeare.

oment through the gloom were seen
d *banners* rise into the air,
colours waving. *Milton.*

nan told Henry, that Sir Richard Croftes,
ret at Stoke, was a wise man; the king
e doubted not that, but marvelled how a
now. *Camden.*

ald had a *bannerol* of gold and purple set
nb. *Id.*

ugustus, and Richard the First, are the
f France and England who have fought
ame *banners*. *Gibbon.*



, in heraldry, such a
rne as a charge, in
ms, and when open
is called 'the banner
,' as 'the field is Ju-
banners disveloped,
l,' which are said to
the arms of the king-
ldachia.

R OF DENMARK, or the DANISH
was a famous magical standard, taken
Danes by Alfred the Great, in spite of
lous powers and properties, which are
ibed by Sir John Spelman. 'It was
with the image of a raven magically
by the three sisters of Hungar and
purpose for their expedition, in re-
eir father Lodebroch's murder, made,
lmost in an instant, being by them at
n and finished in a noontide; and be-
the Danes to have carried great fa-
it, for which it was highly esteemed
It is pretended, that being carried in battle, towards good success it would always seem to clap its wings, and make as if it would fly; but towards the approach of mishap, it would hang down and not move!'

The BANNER OF FRANCE was the largest and richest of all the flags borne by the ancient kings in their military expeditions. St. Martin's cap was in use 600 years as the banner of France; it was made of taffety, painted with the image of that saint, and laid one or two days on his tomb to prepare it for use. This was succeeded by the famous auriflamma, or oriflamme. About the year 1100 was introduced a more pompous apparatus; the mode of which was borrowed from Italy. The banner-royal was fastened to the top of a mast, or some small tree planted on a scaffold, borne on a chariot drawn by oxen, covered with velvet housings, decorated with devices, or cyphers of the reigning prince. At the foot of the tree was a priest, who said mass early every morning. Ten knights mounted guard on the scaffold night and day, and as many trumpets at the foot of the tree never ceased flourishing to animate the troops. This cumbrous machine continued in use about 130 years. Its post was in the centre of the army. And here the chief feats were performed to carry off and defend the royal banner: for there was no victory without it; nor was an army reputed vanquished till they had lost this banner.

BANNERET, from banner. A knight made in the field, with the ceremony of cutting off the point of his standard, and making it a banner. They are next to barons in dignity; and were anciently called by summons to parliament. It is also the name of an officer or magistrate of Rome towards the close of the fourteenth century. The people of that city, and throughout the territory of the church, during the disputes of the antipopes, had formed a kind of republican government, where the whole power was lodged in the hands of a magistrate, called senator, and twelve heads of quarters called bannerets,by reason of the banners which each raised in his district.

BANNERETS, an ancient order of knights, or feudal lords; who, possessing several large fees, led their vassals to battle under their own flag or banner, when summoned thereto by the king. They are also called in ancient writers milites, vexilliferi, and vexillarii, bannerarii, bannarii, banderisii, &c. There are two kinds of knights, great and little; the first whereof were called bannerets, the second bachelors; the first composed the upper, the second the middle nobility. The banneret was a dignitary allowed to march under his own flag, whereas the bachelarius eques followed that of another. To be qualified for a banneret, one must be a gentleman of family, and must have a power to raise a certain number of armed men, with estate enough to subsist at least twenty-eight to thirty men. This must have been very considerable in those days; because each man, besides his servant, had two horsemen to wait on him armed, the one with a crossbow, the other with a bow and hatchet. As he was not allowed to be a baron who had not above thirteen knights' fees, so he was not admitted to be a banneret if he had less than ten. The order of banneret, according to Spelman, was a middle one, between a baron and a simple knight; called sometimes also vexillarius minor, to distinguish him from the greater, that is from the baron, to whom alone properly belonged the jus vexilli, or privilege of the square flag. Hence the banneret was also called banneretus, quasi baro minor; a word frequently used by English writers in the same sense as banneret was by the French, though neither of them occur before the time of Edward II. Some will have bannerets to have originally been persons who had some portion of a barony assigned them; and enjoyed it under the title of baro proximus, and that with the same prerogatives as the baron himself. Some again find the origin of bannerets in France, others in Brittany, others in England. These last attribute the institution of bannerets to Conan, lieutenant of Maximus, who commanded the Roman legions in England under the empire of Gratian in 383. This general, say they, revolting, divided England into forty cantons, and in these cantons distributed forty knights, to whom he gave a power of assembling, on occasion, under their several banners, as many of the effective men as were found in their respective districts: whence they are called bannerets. However this be, it appears from Froissard, &c. that anciently such of the military men as were rich enough to raise and subsist a company of armed men, and had a right to do so, were called bannerets. Not, however, that these qualifications rendered them knights, but only bannerets; the appellation of knight being only added thereto, because they were simple knights before. Bannerets were second to none but knights of the garter. They were reputed the next degree below the nobility, taking precedence next to the knights of the bath, and were allowed to bear arms with supporters, which none else may under the degree of a baron. In France, it is said, the dignity was hereditary, but in England it died with the person who gained it. The order dwindled on the institution of baronets by king James I., Sir John Smith made so after Edgehill-fight, for rescuing the standard of King Charles I., being the last banneret, until the late Sir William Erskine, on his return from the continent in 1764, was made a knight-banneret in Hyde Park by his late Majesty, in consequence of his distinguished conduct at the battle of Emsdorff. But he was not acknowledged as such in this country, although he was invested with the order between the two standards of the fifteenth regiment of light dragoons, because the ceremony did not take place where the engagement happened. Captain Trollope of the Royal Navy was another knight-banneret, created by Geo. III., after lord Duncan's victory at Camperdown, but as this involved some heraldic difficulties on points of precedency, and there was some apprehension of jealousy on the part of baronets, the practice was discontinued. In Switzerland the banneret was a civil officer like the Gonfalonier in some of the Italian republics; and at Lausanne the title was conferred on those magistrates who had the privilege of carrying the banner of that city at the confederation of the cantons.

The form of creating bannerets was on a day of battle; the candidate presented his flag to the king or general, who cutting off the train or skirt thereof, and making it a square, returned it again, the proper banner of bannerets, who are hence sometimes called knights of the square flag. There seems to have been bannerets created either in a different manner, or by others than the sovereign; since King James, in the patent of baronets, gives them precedence to all knights bannerets, except such as are created by the king himself in the field; which implies, either that there are some of this order created out of the field, or by inferior persons.

Bannerol, more properly Banderol, from *banderole*, Fr. a little flag or streamer.

BAN'NIAN, *n. s.* 1. A man's undress, or morning gown, such as is worn by the Bannians in the East Indies. 2. A native of India; now usually applied to a Gentoo servant employed in managing the commercial affairs for Englishmen.

Bannian-Day, in common parlance, a day of self-denial; of shifts and expedients; derived probably from sacred or fast-day.

Bannian-Tree. A sacred fig-tree, growing in India, called by our old herbalists 'the arched Indian fig-tree;' from the various branches of which grow little sprigs downwards, till they reach the ground, take root, as Milton has observed,

> And daughters grow
> About the mother tree, a pillar'd shade,
> High o'er-arch'd, and echoing walks between.
> *Paradise Lost.*

BANNIANS. See Banians.

BANNIER (John), a Swedish general, born in 1601. He served under Gustavus Adolphus, and on his death became commander-in-chief. After gaining many victories, and taking several important places, fortune favored the Imperialists, and they at last drove him out of Bohemia. He died in 1641, on his retreat from the German dominions.

BANNIMUS, q. d. we banish, from the obsolete verb *bannio*, the form of expulsion of any member from the University of Oxford, by affixing the sentence up in some public place, as a promulgation of it.

BANNITUS, an exile or outlaw.

BAN'NOCK, *n. s.* A kind of oaten or pease-meal cake, mixed with water, and baked upon an iron plate over the fire; used in the northern counties, and in Scotland.

Bannocks differ from cakes, in being thicker and softer; and their taste is thought to be improved by being baked in the embers, or on a stone placed before the fire, or a slate above it.

Bannock-burn, a village of Scotland, in Stirlingshire, seated on the Bannock, from whence it is named, famous for the decisive battle fought near it between king Robert Bruce of Scotland, and Edward II. of England. A.D. 1314.

It is to be regretted that to poetical narratives only (that of the Scottish poet Barbour particularly) we must look for the existing detail of the events of this memorable day. They, however, were so important, and have since been so frequently alluded to by poets and historians, that we cannot omit to furnish the reader with the best account we can digest. On Saturday the 22d of June, Bruce having received intelligence that the English had reached Edinburgh drew his army out of his encampment to take up a position in the neighbourhood of Stirling. Here he occupied a wood, extending on the right towards the church of St. Ninian, and on the left nearly, it is supposed, in the direction of the road from Edinburgh to Stirling; directing a number of small pits to be dug knee-deep, and covered with turf, which concealed at the bottom a kind of spikes called calthrops, designed for the destruction of the enemy's cavalry. The position was besides protected by a neighbouring morass. On Sunday, the 23d, an alarm being given of the approach of the enemy, Bruce prepared to receive them. His army heard mass: and in answer to a proclamation that whoever would, might retire, all unanimously declared their resolution to conquer with him or die. His right wing was commanded by his brother Edward, the left by lord Douglas and the younger Stewart, and the centre by his nephew, Randolph, earl of Murray, while he himself commanded a reserve posted on a rising ground. The English army meanwhile had sent a squadron of 800 horse for the purpose of gaining Stirling castle by a circuitous route, which the king perceiving, reproached the earl of Murray with leaving the place exposed, and the latter hastened with 500 spearmen to turn the enemy, an object which he with difficulty accomplished. The van of the English army soon after appeared in sight. Henry de Bohun, a knight of the Hereford family, advancing a bow-shot before his comrades, now distinguished 'the Bruce' from a crown surmounting his helmet, and the manner in which he disposed his troops, he himself being in advance of his front. The Englishman advanced upon him, but his spear missing the king, the latter, rising in his stirrups, cleft his opponent's helmet with a single blow of his battle-axe, and Bohun fell: this was the only memorable event the first day. At the succeeding dawn Bruce reminded his troops of the past conduct of the enemy before them, their usurpation of the government of the country, and their barbarous treatment of those that had fallen into their hands, that they therefore were now to fight for all they held dear, their own liberty, and the comfort and existence of their families. He showed them his excellent position, urged the necessity for order, and to preserve their line unbroken, while he promised the amplest rewards to all who exerted themselves, and to their heirs if they fell. At daybreak Maurice, Abbot of Inchaffray, celebrated mass in front of the army, and exhorted the soldiers, bearing a crucifix in his hand. The troops now breakfasted on the ground, and Bruce created some of the most distinguished of his followers knights. Edward also in person commanded the English army, attended by a body-guard of 500 cavalry: among his troops were 2,000 archers. He likewise was confident of victory, but the same unanimity did not subsist among his foes; and the Scottish host having knelt to utter a prayer and receive benediction, he exclaimed to those around him, 'Behold, they kneel for mercy!' But they quickly undeceived him;—the armies approached, and a contest ensued, unexampled in the annals of British history. The English van, composed of cavalry, charged the right wing of the Scots in full gallop. Here Edward Bruce commanded, and received them with intrepidity. While this wing was engaged, Randolph advanced to meet the main body of the enemy; and the left wing also hastened into the conflict. Repeated charges of cavalry in vain attempted to break the Scottish line—it was impenetrable; everywhere they were resisted and driven back. At this time the battle became general. The Scots were annoyed by the English archers; but they fought desperately with their spears, swords, and knives, and also with iron clubs or maces, and found the advantage of acting in a compact body, while the English forces were too unwieldy to be concentrated. The Scots were also protected by their light armour, which at the same time did not restrain their movements. Edward, the king's brother, was hard pressed by the English cavalry, and Murray, making a movement to his support, was almost overwhelmed by the multitude of the enemy, who presented a vast and extensive front. The Scottish king now directed Sir Robert Keith to take the archers in flank with 500 horse, and their impetuosity proved irresistible. The enemy were overthrown, and fled with precipitation. The earl of Gloucester, endeavouring to rally the fugitives, was unhorsed and slain. The numbers of the English finally proved their destruction: for those who recoiled threw the rest into disorder, and those who fell were trampled to death. The battle, notwithstanding, continued to rage, and victory was long and furiously contested. But, at length, the retainers of the Scottish camp, who had previously been sent to a valley in the rear, suddenly appeared on a neighbouring height, and the enemy, believing it a strong reinforcement, took at once to flight. Edward, with 500 horse, sought shelter in Stirling castle, but the governor found means to dissuade him from remaining there. The rout of his army became complete. Some sought refuge among the rocks of the castle, others hurried to the river Forth, and they were drowned; but the most terrific carnage was in the valley of the Bannock, for the ascent towards the east being difficult, and probably impeded by wood, the fugitives were exposed to inevitable destruction. Scarcely any who took that direction escaped; and the course of the river is said to have been completely dammed up by the English who were slain. Edward, hotly pursued, continued his flight, followed by sixty horse, to Winchburgh, twenty miles from the field of battle, where, again mounting, the pursuit was continued to Dunbar castle, whence he was ultimately conveyed by a vessel to England. The loss on both sides in this memorable battle was immense. Barbour asserts that the English had 30,000 men and 200 knights killed: but the truth of this calculation is questionable, as it is said elsewhere that only forty-two knights were slain, and sixty made prisoners. Barbour also affirms that only two Scotsmen of note fell on the occasion, Sir William Vipont and Sir Walter Ross. The earl of Gloucester's fate, who was the near relative to Edward, was much lamented; and historians state that had the Scots known him he would not have fallen. His body was carried to St. Ninian's church, and sent with that of lord Clifford to England. 'O day of vengeance and fatality,' one of our historians exclaims, 'hateful accursed day, to be blotted from the circle of the year; a day which tarnished the glory of England, despoiled our nation, and enriched its enemies to the amount of £200,000. How many valiant youths and illustrious nobles, how many excellent horses and beautiful arms, how many precious vestments and golden vessels, were lost in that single unfortunate day.' The privy seal of Edward was among the spoils, and afterwards restored by Robert. He is said, indeed to have acted upon this victory with that clemency and moderation which has rarely been equalled.

The consequences of this great battle were the surrender of the fortresses of Scotland to Bruce, the liberation of the inhabitants from a foreign yoke, and the firm establishment of that prince upon the throne. Memorials of it are said still to remain near the spot, where armour and weapons are frequently dug up; and at an interval of 500 years the inhabitants of the vicinity met on the 24th of June 1814, to celebrate the triumph of their ancestors. Sir Walter Scott has commemorated it with enthusiasm in his Lord of the Isles.

BANNOW, a town of Ireland, ten miles south-west of Wexford.

BANNUM, in law, the utmost bounds of a manor or town; bannum capitis was a mulct paid in cattle.

BANNUS DEI, the bann of God, an expression used by writers of the middle age, for excommunication.

BANNUS REGIS, a proclamation of silence anciently made by the court, before the encounter of the champions in a combat.

BANOLAS, a town of Spain, in Catalonia, district of Gerona, with 3000 inhabitants, and a considerable trade in linen.

BANOS, a town of Leon, Spain, thirty miles from Plasencia, in Estremadura. The number of families is about 300, who are employed principally in the manufacture of linen. It takes its name from the hot sulphureous baths to the north-east of the town. Here are to be seen the remains of a Roman mound or dyke. The territory is covered with olives, chestnuts, and vines; the last produces annually 15,000 arobas of wine.

BANOY, the name given by the people of the Philippine Islands, to a species of hawk, somewhat larger than our sparrow-hawk, of a yellowish color on the back and wings, and white under the belly. It is the most common species of hawk in that part of the world, and is very voracious.

BAN'QUET, *v.* & *n.*
BAN'QUETANT,
BANQUET'ER,
BAN'QUETING.
} Fr. *banquet*, Ital. *banchetto*, Span. *banquete*, *vanqueto;* Germ. and Dut. *bancket*.
Derived from *bank*, a bench or table, around which messmates or companions sit to eat or feast together. It now signifies a luxurious and sumptuous entertainment. Whether the feast, or the dessert which succeeds it, or both.

Shall the companions make a *banquet* of him?—Shall they part him among the merchants? *Job.*

In which how many wonders doe they reede,
To their conceipt that others never see!
Now of her smiles with which their soules they feede,
Like gods with nectar in their *bankets* free. *Spenser.*

The mind shall *banquet*, tho' the body pine:
Fat paunches make lean pates, and dainty bits
Make rich the ribs, but bankerout the wits.
Shakspeare.

Welcome his friends,
Visit his countrymen, and *banquet* them. *Id.*
In his commendations I am fed;
It is a *banquet* to me. *Id.*

You cannot have a perfect palace, except you have two sides; a side for the *banquet*, and a side for the household; the one for feasts and triumphs, and the other for dwelling. *Bacon.*

They were *banqueted* by the way, and the nearer they approached, the more increased the nobility. *Sir J. Hayward.*

In a *banqueting*-house, among certain pleasant trees, the table was set near to an excellent water-work. *Sidney.*

Home then, my lambs; the falling drops eschew
To-morrow shall ye feast in pastures new,
And with the rising sun, *banquet* on pearled dew.
Fletcher's Purple Island.

When Venus was born all the gods were invited to a *banquet*. *Burton's Anatomy of Melancholy.*

If a fasting-day come, he hath on that day a *banquet* to make. *Hooker.*

At that tasted fruit,
The sun, as from Thyestan *banquet*, turn'd
His course intended. *Milton.*

So long as his innocence is his repast, he feasts and *banquets* upon bread and water. *South.*

That dares prefer the toils of Hercules,
To dalliance, *banquets*, and ignoble ease.
Dryden.

At the walk's end behold, how rais'd on high,
A *banquet*-house salutes the southern sky. *Id.*

I purpos'd to unbend the evening hours,
And *banquet* private in the women's bow'rs.
Prior.

With royal *banquets* feasts my longing soul,
And seals his truth with sacramental wine.
Mrs. Rowe.

BANQUETING-HOUSE, BANQUETING ROOM. The ancient Romans supped in the atrium, or vestibule of their houses; but, in after-times, magnificent saloons, or banqueting rooms, were built for the more commodious and splendid entertainment of their guests. Lucullus had several of these, each distinguished by the name of some god; and there was a particular rate of expense appropriated to each. Plutarch relates with what magnificence he entertained Cicero and Pompey, who went with design to surprise him, by telling only a slave who waited, that the cloth should be laid in the Apollo. The emperor Claudius, among others, had a splendid banqueting room named Mercury. But every thing of this kind was outdone by the lustre of that celebrated banqueting house of Nero, called domus aurea; which, by the circular motion of its partitions and ceilings, imitated the revolution of the heavens, and represented the different seasons of the year, which changed at every service, and showered down flowers, essences and perfumes, on the guests. See SALOON.

BANQUETTE, *n. s.* Fr. in fortification, a small bank at the foot of the parapet, for the soldiers to mount upon when they fire.

TICKLE, in ichthyology. See GAS-
s.

TICKLE, *n. s.* A small fish, called
k.

AM, a large town of the island of Java,
st Indies, once the capital of an indepen-
. But its harbour has been gradually
p with soil from the surrounding hills:
ir is so unhealthy that its inhabitants
ı compelled to desert the place almost
In 1595 the king of Bantam called
istance of the Dutch of Java, against
guese, and as a return for their aid
hem to build a factory here, where also
sh, under Captain Lancaster, established
03. At this time the sovereign had a
al navy of his own, and until the latter end
eventeenth century, when he sent an
to England, to request assistance against
h. In the following year the latter took
l, and in 1683, they entirely dispossessed
the government; the English factory
ing to Surat.

utch East India Company now keep a
here, nominally to defend the king, but
have him always in their own power.
f authority on the part of the Dutch East
mpany was vested in a senior merchant,
title of Commandant, who had the
ent of the trade, which consisted chiefly
r and some cotton yarn. To the com-
at Bantam belonged the residencies of
, Toulang, Baunang, and Lampong
, situated on the southern part of Suma-
e sovereigns possess the power of life
h over their subjects, but pay an annual
f six million pounds of pepper to the

imate of Bantam, says Mr. Hamilton, is
e pestilential than that of Batavia, of
remarkable instance is mentioned. On
of the 18th March 1804, the king of
was murdered by one of his grand
, who had concealed himself under his
who was afterwards discovered and put
An embassy was sent from Batavia, to
l instal the new king in the name of the
ompany, part of which ceremony consists
g him weighed in a pair of scales at the
te, after having feasted for fifteen days.
utation was composed of a counsellor of
ur senior merchants, a major, lieutenant,
two corporals, eighteen French and
Dutch grenadiers. The external forms
l fifteen days; at the end of which time,
after their return, the whole of the Euro-
nadiers and subalterns died, except two
of the French who escaped. The coun-
s wife who had accompanied him, the
d four merchants, all returned with putrid
hich brought them to the brink of the
d the secretary died. In 1811, after the
of Batavia, the town and district of
surrendered to the British arms without
e. Bantam was restored to the Dutch
eace of 1814. Long. 106° 31′ E., lat. 6°

AM, or dwarf cock, in zoology, a well
variety of the species phasianus gallus.
ASIANUS.

BANTAM WORK, a kind of painted or carved work, resembling that of Japan, only more gaudy Some are flat, lying even with the black, and others highly embossed, as we find in many large screens. The Japan artists work chiefly in gold and other metals; and those of Bantam generally in colors, with a small sprinkling of gold here and there: for the flat Bantam work is done in colors mixed with gum-water, proper for the thing designed to be imitated

BAN'TER, *v.* & *n.* }
BAN'TERER, }
BAN'TERING. }
The derivation unknown. Perhaps from *badiner*, Fr. It signifies to mock with ridicule. A lighter kind of raillery. Playing upon the fretfulness of the testy, the simplicity of the ignorant, the self-importance of the proud, and the conceitedness of the vain. It is sometimes employed against the infirmities of the good and the virtuous. A species of humor that is more allied to malignity than kindness, and which sometimes meets with its reward.

> 'Tis thus, malicious deity,
> That thou hast *banter'd* wretched me;
> Thus made me vainly lose my time,
> Thus fool away my youthful prime.
> *Walsh. On loving one I never saw.*

The magistrate took it that he *bantered* him, and bade an officer take him into custody. *L'Estrange.*

It is no new thing for innocent simplicity to be the subject of *bantering* drolls. *Id.*

This humour, let it look never so silly, as it passes many times for frolic and *banter*, is one of the most pernicious snares in human life. *Id.*

What opinion have these religious *banterers* of the divine power? Or what have they to say for their mockery and contempt? *Id.*

And the grave affairs of state have been treated with an air of irony and *banter*. *Shaftesbury.*

> Could Alcinous' guests withhold
> From scorn or rage? Shall we, cries one, permit
> His lewd romances, and his *bant'ring* wit? *Tate.*

Metaphysicks are so necessary to a distinct conception, solid judgment, and just reasoning on many subjects, that those who ridicule it, will be supposed to make their wit and *banter* a refuge and excuse for their own laziness. *Watts.*

BANTIUS (L), a spirited youth of Nola, whom Hannibal found almost dead among those who had fallen in the battle of Cannæ. Having been kindly treated, and sent home with great generosity, he took it into his head to betray his country to such a humane enemy; but Marcellus, the Roman general, being informed of it, reprimanded Bantius, and he afterwards continued steady in the Roman interest.

BAN'TLING, *n. s.* If it has any etymology, it is perhaps corrupted from the old word *bairn*, *bairnling*, a little child. A low word; so says Johnson. But it is usually applied to a child born, or at least begotten, before marriage.

> If the object of their love
> Chance by Lucina's aid to prove,
> They seldom let the *bantling* roar
> In basket at a neighbour's door. *Prior.*

BANTRY BAY, called also BEERHAVEN, a capacious bay of Ireland, on the coast of Cork, capable of containing all the shipping of Europe. It is twenty-six miles long, three broad, and forty fathoms deep in the middle, here are two small islands, Bear and Whiddy. Coral is dredged from the bottom of the bay, and used as manure in the neighbourhood. Fish were formerly very plentiful here; but of late the business has declined. In May, 1689, a French fleet, which had brought succours of arms, ammunition, and money, to the adherents of king James, was attacked in this bay by Admiral Herbert; and in December, 1796, another French fleet, consisting of seven sail of the line, two frigates armed en flute, and seventeen transports, anchored here for a few days, and landed an officer and eight men in a boat, who were taken prisoners.

BANTRY, a large barren barony of Ireland, in the county of Cork.

BANTRY, a sea-port town of Ireland, in the county of Cork, and province of Munster, seated on the bay, about thirty miles west of Cork, and 164 south-west of Dublin.

BANYAN TREE, in botany, a name sometimes given to the ficus Indica.

BANYOUWANGY, a Dutch settlement of Java, containing the residence of a native chief. The Dutch garrison the fort to protect themselves and commerce from the numerous pirates of the straits of Bali.

BANZA, a town of Congo Proper, on the river Zaire.

BAOBAB, the name given by Prosper Albinus to the African calabash. See ADANSONIA. This is the largest vegetable production known: although the trunk is not above twelve or fifteen feet high, it is from sixty to eighty-five feet round, and the lower branches extend almost horizontally about sixty feet. Their own weight bending these extremities to the ground, they form an hemispherical mass of verdure about 120, and sometimes 150, feet in diameter. The flowers of this plant are in proportion to the size of the tree, and are followed by a fruit pointed at both ends, about ten inches long and five or six broad, covered with a kind of green down, under which is a hard, black, radiated, rind. The fruit hangs to the tree by a pedicle two feet long. It contains a whitish, spongy, juicy, substance of an acid taste, and seeds of a brown color, of the shape of a kidney bean, which are called goui When dry, the pulp by which the seeds are surrounded, is powdered, and brought into Europe under the name of terra sigillata lemnia. The kernel contains a large proportion of alkali, when burnt, and the negroes mix it with palm oil to make soap. The bark is called lalo; the negroes dry and powder it; after which it is preserved in little cotton bags, and two or three pinches are put into their food: it is mucilaginous and supposed to check perspiration. This tree is a native of the west coast of Africa, from the Niger to the kingdom of Benin.

BAOL, a small kingdom of western Africa, between the Senegal and Gambia. It lies south of Cayor, by which it has recently been conquered. It has a capital of the same name.

BAPAUME, a strong town of France, in the ci-devant French Netherlands, now included in the department of the Straits of Calais. Fine thread and lawn are made here. De Ville and Vauban fortified it in 1641, and France obtained the cession of it in 1659. Situate eighteen miles south-east of Arras.

BAPHE, in the writings of the ancients, a word used to express that fine red color with which they illuminated the capital letters in manuscripts, at the beginning of chapters. It is also called by some encaustum sacra, and by others coccus and cinnabaris. It was a very elegant color, and said to have been prepared of the purple taken from the murex, and some other ingredients. It was called encaustum, from its resembling the fine bright red used in enamels.

BAPTÆ, in antiquity, an effeminate voluptuous kind of priests of the goddess Cotytto, at Athens; so called from their stated dippings and washings, by way of purification; their rites were performed in the night, and consisted chiefly of lascivious dances. Eupolis having composed a comedy to expose them, entitled *βαπται*, they threw him into the sea, to be revenged; and the same fate is also said to have befallen Cratinus, another Athenian poet, who had written a comedy against the Baptæ, under the same title. Others deduce the denomination Baptæ from the practice of dyeing and painting their bodies, especially their eyebrows, and officiating at the service of their deity, with the parade and demureness of women. Juvenal describes them in this light. Stat. ii. ver. 91.

BAPTES, in natural history, a name given by the ancients to a fossile substance used in medicine; they have left us but very short descriptions of it. Pliny only tells us, that it was soft and of an agreeable smell. Hence Agricola judges, that it was probably one of the bitumens

BAPTISECULA, in botany, a name given by some authors to the blue corn-flower, called the cyanus or blue-bottle.

BAPTISIA, in botany, a genus of plants, class, decandria; order, monogynia. The generic character is: CAL. semi four-fivefid, bilabiate: COR. papilionaceous, petals nearly equal in length: VEXILLUM reflected laterally: STAM. deciduous; legume ventricose, pedicellate, many-seeded.—Hort. Kew. It is a genus closely allied to podalyria, and containing four species.

BAPTISM.

ISM,
E, *v.*
ER, *n.*
MAL,
T,
TERY,
T'ICAL,
ATION.

Derived from the Gr. *βαπτω* and *βαπτιζω*. The primary meaning is to dip, to plunge, to immerge. Protestant Christians use it strictly in its primary sense, or with greater latitude of meaning, according to their respective tenets, ject of the rite of baptism, as an ordi- Christianity. It is sometimes employed y, to express overwhelming sorrows; ng of the earth by the dews of heaven; cred influences of the spirit of God in the heart.

baptism to be *baptised* with, and how am d till it be accomplished. *Luke.*

f he be *baptised* without penitence of his old ceiveth the mark of *baptisme*, but not the the remission of his sinnes, til he have ntance. *Chaucer. The Persones Tale.*

Speak, my Lord;
ll hear, note, and believe in heart,
you speak is in your conscience wash'd
sin with *baptism*. *Shakspeare.*

isme gives virtue to ours. His last action passion) was his *baptizing* with blood; his his *baptization* with water: both of them world from their sins. *Hall's Contemplations.*

is given by water, and that prescript form which the church of Christ doth use. *Hooker.*

He to them shall leave in charge,
all nations what of him they learn'd,
salvation; them who shall believe,
g in the profluent stream, the sign
ing them from guilt of sin to life,
nd in mind prepar'd, if so befal,
th, like that which the Redeemer died. *Milton.*

reflect that we are Christians: that we are the name of the Son of God, and *baptized* reconcileable enmity with sin, the world, and *Rogers.*

rament of *baptism* was supposed to contain absolute expiation of sin; and the soul was restored to its original purity, and entitled mise of eternal salvation. *Gibbon.*

Philosophy, *baptiz'd*
pure fountain of eternal love,
s, indeed; and, viewing all she sees
nt to indicate a God to man,
m his praise, and forfeits not her own. *Cowper's Task.*

unblest the genius of the place!
ough the air, a zephyr more serene,
the brow, 'tis his; and if ye trace
his margin a more eloquent green,
heart the freshness of the scene
le its coolness, and from the dry dust
y life a moment lave it clean
nature's *baptism*,—'tis to him ye must
ons for this suspension of disgust. *Byron. Childe Harold.*

M has been defined, a New Testament , appointed by our Lord Jesus Christ, t or initiatory sacrament of the Gospel on, whereby its subjects are admitted as embers of that spiritual society of believers, which is scripturally denominated the 'Church of Christ,' and entitled to all the privileges of church communion. The derivation of the word is from the Greek *βαπτιζω*, which literally signifies dipping or immersion, but is often used in a lower sense to express the legal ablutions and washings of the ceremonial law. See Heb. ix. 10. and Mark vii. 8. Baptism is denominated or described by various ecclesiastical writers, in other ways; it is sometimes called palingenesia, the laver of regeneration, salus, salvation; *σφραγις*, signaculum Domini, or signaculum fidei, the seal of faith; mysterium, mystery; sacramentum fidei, the sacrament of faith, &c. Sometimes it was called viaticum, from its being administered to departing persons; sometimes sacerdotium laici, the lay priesthood, because allowed in cases of necessity to be conferred by laymen; sometimes the great circumcision, because it succeeded in the room of circumcision, and was to be a seal of the Christian covenant, as that was the seal of the covenant made with Abraham. As it had Christ for its author, it was anciently styled *Δωρον* and *χαρισμα* Κυριου, the gift of the Lord; sometimes simply *δωρον*, by way of eminence. And as it made men members of the church, it had the title of Τελειωσις, and Τελειη, the consecration, and consummation; because it gave men the perfection of Christians, and a right to partake of the Το Τελειον, which was the Lord's Supper. It was also entitled *μυησις* and *μυϛαγογια*, the initiation, as it admitted men to all the sacred rites of the Christian religion.

Purification by water seems so natural an emblem to express mental purification, that the use of it has prevailed amongst nations who were never enlightened by revelation; water was used in the religious ceremonies both of the Egyptians and Greeks; and Grotius is of opinion that it originated at the time of the deluge. According to Clemens, Alexandrinus, and Tertullian, purification, by water, was the first ceremony performed at initiation into the Eleusinian mysteries, which were derived from Egypt; and Hesychius renders the word *υδρανος*, or the waterer, by *ο αγνιϛης των* Ελευσινιων, the priest whose office at the Eleusinian mysteries was that of purifying.

The Jews are said by many writers, to have used Baptism together with circumcision and sacrifice in the admission of male proselytes: all these ceremonies, according to the same authors, having been observed in their own admission into covenant with the Deity at Sinai, when they washed their clothes, and sanctified themselves. See Exod. xix. 10.—14. The female proselyte was admitted by baptism and sacrifice, and in cases where the proselyte had children, they both circumcised and baptised, or baptised them only, according to their sex. The baptism of a proselyte was what they called metonymically his regeneration, or 'new birth.'

The connexion, or rather the similitude between Jewish and Christian baptism has been thus exhibited by Dr. Wall's celebrated treatise upon the latter institution.

1. The Jews required of proselytes a renunciation of idolatry, and to believe in Jehovah.	1. The Christians required to renounce the devil, and all his works, and to believe in the Trinity.
2. The Jews interrogated the proselyte while standing in the water.	2. The Christians put interrogatories as the catechumen was about to enter the water, when he had before answered in the congregation.
3. The Jews baptised the infant children of proselytes.	3. The Christians baptised infants.
4. The Jews required for an infant proselyte that either his father, or the church of the place, or three grave persons should answer for the child.	4. The Christians observed a similar custom.
5. A Jewish proselyte was said to be born again, when baptised.	5. Our Saviour and the Apostles call baptism regeneration, or being born again.
6. The Jews told the proselyte that he was now clean and holy.	6. The same term is used in the New Testament: the baptised Christians are called the saints, the holy, the sanctified—sanctified with the washing of water.
7. The Jews declared the baptised to be under the wings of the Divine Majesty, or Shechinah.	7. Among Christians this was shown by the gifts of the Holy Ghost: to this end the laying on of hands was used, a custom, probably taken from the Jewish church.
8. At the paschal season, the Jews baptised proselytes, that they might eat the passover.	8. The Christians at Easter administered baptism in a solemn manner.
9. The Jews had their proselytes of the gate.	9. The Christians had their catechumens, or competentes.

The above statements are ingeniously drawn from the writings of Maimonides and the Babylonian Talmud, which was completed at the close of the fifth century, and of course affords an historical testimony of facts existing and believed in at that time. Spencer, who is fond of deriving the rites of the Jewish religion from the ceremonies of the Pagans, lays it down as a probable supposition, that the Jews received the baptism of proselytes from the neighbouring nations, who were wont to prepare candidates for the more sacred functions of their religion by a solemn ablution; that, by this affinity of sacred rites, they might draw the Gentiles to embrace their religion, and that the proselytes (in gaining of whom they were extremely diligent) might the more easily comply with the transition from Gentilism to Judaism. In confirmation of this opinion he observes, first, that there is no divine precept for the baptism of proselytes, God having enjoined only the rite of circumcision for the admission of strangers into the Jewish religion. Secondly, that, among foreign nations, the Egyptians, Persians, Greeks, Romans, and others, it was customary that those who were to be initiated into their mysteries, or sacred rites, should be first purified by dipping their whole body in water. That learned writer adds, as a farther confirmation of his opinion, that the cup of blessing likewise, added to the paschal supper, seems plainly to have been derived from a pagan original: for the Greeks, at their feasts, had one cup, called ποτηριον αγαθου δαιμονος, the cup of the good demon or god, which they drank at the conclusion of their entertainment, when the table was removed. Since, then, a rite of Gentile origin was added to one of the Jewish sacraments, viz. the passover, there can be no absurdity in supposing, that baptism, which was added to the other sacrament, namely, circumcision, might be derived from the same source. In the last place, he observes, that Christ, in the institution of his sacraments, paid a peculiar regard to those rites which were borrowed from the Gentiles; for, rejecting circumcision and the paschal supper, he adopted into his religion baptism and the sacred cup; thus preparing the way for the conversion and reception of the Gentiles into his church.

Some able critics, however, who oppose the general conclusions of the Baptists upon this subject, agree with them in discarding these alleged proofs of the connexion between the Christian institute and Jewish proselyte baptism. The learned Owen says:—'The opinion of some learned men, about the transferring of a Jewish baptismal rite (which, in reality, did not then exist), by the Lord Jesus for the use of his disciples, is destitute of all probability.' And in his exercitations on the epistle to the Hebrews, Exercitat. xiv. 'From this latter temporary institution (the washing of their clothes commanded upon the Israelites at Sinai) such as they had many granted to them in the wilderness, before the giving of the law, the Rabbins have formed a baptism for those that enter into their synagogue; a fancy too greedily embraced by some Christian writers, who would have the holy ordinance of the Church's baptism to be derived from thence. But this washing of their clothes, not of their bodies, was temporary, never repeated; neither is there any thing of any such baptism or washing required in any proselyte, either man or woman, where the laws of their admission are strictly laid down. Nor are there the least footsteps of any such usage among the Jews until after the days of John the Baptist, of whom it was first taken up by some anti-mishnical Rabbins.' Jennings, in his Jewish Antiquities, (vol. I. p. 134, 8.) a work recommended by the bishop of Lincoln, and placed in the first class of those which every clergyman ought to possess; says it is more likely the Jews took the hint of proselyte-baptism from the hristians after our Saviour's time, than that he rrowed his baptism from their's; which, whener it came into practice, was one of those additions to the law of God, which he severely cenres. There wants more evidence of its being ancient as our Saviour's time, than I apprend can be produced, to ground any argument pon it in relation to Christian baptism. We erefore dismiss this form of the admission of roselytes, as uncertain.' And Dr. Lardner, orks, vol. V. p. 501, 2.: 'I pay no regard to hat the later Jewish Rabbins say of the method f initiating proselytes, by circumcision, baptism, and sacrifice; who have made void not only the moral (with which our Lord often charged them, as Matth. xv. 1—9, Mark vii. 1—13, and other places), but also the ritual part of the law of God. Indeed, they had corrupted the Mosaic ritual by numberless additions, before the coming of our Saviour. As appears from the text of St. Mark just referred to. Nor have they ceased to do the like since.

'I think, as before said, that women were first baptised under the evangelical dispensation. I am also of opinion, that our blessed Lord's forerunner first made use of baptism as an initiating ordinance; and therefore he was called the Baptist, Ὁ Βαπτιστης. Matth. iii. 1, and in many other places. Nor am I singular in this opinion.'

From this alleged Jewish ordinance, as Jennings has observed, some sects infer, that under the Christian dispensation baptism is only to be administered to converts from Judaism, Mahommedanism, paganism, or some other religion, and to their descendants born before their conversion and baptism, but to none born after. Mr. Emlyn, in particular, (Previous Question to several Questions, or Valid and Invalid Baptism), insists upon this argument against the constant and universal obligation of infant baptism. And the Society of Friends ground on this their principal argument for rejecting baptism with water as a 'carnal washing.' See Mr. Gurney's late defence of the 'Peculiarities of Friends,' p. 67, &c.

The baptism of John naturally presses upon ur consideration at the commencement of every nquiry upon this subject. Its divine original is pressly taught, John 1 and 33, and its object as to prepare the way for the Messiah by callg a general attention to him and preaching the cessity of repentance. The Jews seem to have pected a general baptism at the coming of the Messiah, and accordingly express little surprise t the fact of the baptism itself, but rather queson the authority of John to administer it. 'Why baptisest thou then if thou be not Christ, ither Elias, nor the prophet?' John uniformly re testimony to the more glorious person and fice of the Messiah; 'I indeed,' said he, 'bap- e you with water; but there standeth one ong you whom ye know not, he shall bap- e you with the Holy Ghost and with fire:' d, agreeably to the nature of his mission, he ght them that his baptism was of no more se after the entrance of the latter upon his blic ministry; 'He must increase, but I must crease;' 'I know him not but that he should made manifest to Israel; therefore am I come baptising with water;' and the whole of his ministry received a perfect accomplishment, when, amidst the admiring multitudes, assembled on occasion of his baptising his great successor, there came a voice from heaven, saying, 'this is my beloved son, in whom I am well pleased, hear ye him.' The cause of Christian baptism has frequently been advocated, and, as some have thought, illustrated, from the baptism of John; but John, according to the scriptures, is to be considered as a member of the Old Testament church, agreeably to our Lord's language 'the least in the kingdom of heaven is greater than he.' The nature and obligation of baptism as a Christian ordinance, is to be placed on different and on better grounds.

1. The first thing to be considered is the original institution of this sacrament by our Lord himself, as a means of admission into his church. He gave the universal commission to the disciples after his resurrection from the dead, 'Go ye and teach all nations, baptising them in the name of the Father, and of the Son, and of the Holy Ghost. He that believeth and is baptised shall be saved, he that believeth not shall be damned,' Mark, xvi, 15, 16. As a sacrament of initiation, baptism, according to the majority of writers on this subject, corresponds with circumcision in the Jewish establishment, being the badge of distinction between the church and the world. The analogy between these two ordinances appeared so forcible to the church in the time of St. Cyprian, that his opinion was requested upon the point, whether baptism ought not to be delayed till the eighth day after the birth of a child, in order that the resemblance between the Jewish and Christian sacraments might be more perfectly exhibited. Gregory Nazianzen was an advocate for the eighth day. Circumcision has been considered, from a very remote period, as a type of baptism, and those arguments in behalf of infant baptism have been deemed valid, which are drawn from the practice of circumcision under the ceremonial law. St. Paul himself appears to teach the analogy of the two ordinances in the following language, found in Col. ii. 11. 'In whom ye are circumcised with the circumcision made without hands, in putting off the body of the sins of the flesh by the circumcision of Christ (or Christian baptism), buried with him in baptism.'

That baptism must be received by all believers, is evident from the very language of the original institute, 'he that believeth and is baptised shall be saved,' and so strongly did the early fathers feel the necessity of it, that they frequently expressed their doubts as to the safety of infants who died in an unbaptised state. Whether it be possible for a man to be saved in an unbaptised condition the church of England nowhere decides; but the scriptures have been thought to lean to the side of absolute necessity, in our Lord's words to Nicodemus, John, iii, 5, 'Verily, verily, I say unto thee, except a man be born again of water and of the spirit, he cannot enter into the kingdom of God.' The fathers generally supposed this intended to express the absolute necessity of baptism: the former part of the verse evidently alluding to the outward form of administration by water; the latter, to the subsistance of an inward grace by the spirit of God; constituting, in reality, that regeneration of the mind of which the outward regenerative rite is an imperfect representation. Hooker's language upon the necessity of the exterior ordinance is, 'If Christ himself, which giveth salvation, do require baptism it is not for us, that look for salvation, to sound and examine him whether unbaptised men may be saved, but seriously to do what is required, and religiously to fear the danger which may grow by the want thereof.'

2. The second thing worthy of consideration is the proper subjects to whom baptism may be administered.

The church of England admits, equally, to the sacrament persons of both sexes, adults or children. Considerable opposition of opinion, nevertheless, prevails at present, with respect to the validity of infant baptism and its benefits; for an historical sketch of the ceremony, see PÆDOBAPTIST. It may be sufficient to our present enquiry to observe, that there is no church in the world, the Baptist excepted, that does not admit of infant baptism, and that the question was never agitated upon any considerable scale until the period of the reformation. The service found in the Common Prayer for the baptism of such as are of riper years, was added at the review on the restoration of Charles II. in consequence of the growth of Anabaptists, who had become so numerous in the preceding century, that it was necessary to have a form fitted for their service.

CLINICAL BAPTISM, which was used in the first centuries of the christian era, was baptism administered to a person on his death-bed; of which custom, mention is made by Cyprian and Eusebius, by Epiphanius in Heres. Cerinth, and by other writers of the fourth and fifth centuries. In a case where a heathen in his last sickness, was converted to the Christian religion, such a baptism became necessary. But, in consequence of the superstitious notion that baptism alone washed away all the sins of the past life, many persons delayed the consideration of Christianity till their last moments, intending just at that crisis to make use of baptism, and thus die in the hope of heaven. Gregory Nyssen, Chrysostom, Nazianzen, and other fathers of the church, inveighed against this delusion in the most powerful language. The two most remarkable instances of the superstition alluded to, are found in the emperor Constantine and his son Constantius, who were both baptised on their death-beds. But, since in all cases the sincerity of death-bed religion is, to say the least, doubtful, it was decreed by the council of Neocesarea, A. D. 350, and of Laodicea, 363, that no clinic should ever be admitted to the order of presbyter.

3. The third enquiry on this subject respects the persons in whom is vested the office of administering this sacrament. The right of baptising has generally been committed to the clergy of all communions. It belongs to bishops and presbyters as a part of their office, although, from the example of Philip, it appears that deacons have a divine authority for performing it, perhaps equal to either of the two former. In our established church deacons are empowered to baptise only in the absence of the priest, a limitation which is intended out of respect to the higher orders of the clergy. Different opinions appear to have been held by the fathers upon the subject of lay-baptism. Tertullian admits laymen to administer it in cases of urgent necessity: the same sentiment was expressed by St. Jerome, and by the council of Eliberis, A. D. 305. Calvin also confesses the antiquity of the opinion.—Inst. l. iv. c. xv. sec. 20. Basil however held the contrary notion, and the apostolic, Const. c. x. l. iv., forbids laymen to baptise. It is however one thing to dispute the right of a layman to baptise, and another thing to deny the spiritual validity of a sacrament so administered, especially since several of the ancient fathers allowed the validity of the ordinance even when administered by women. Baptism by laymen is at present unknown in our national church, it may nevertheless be interesting to our readers to notice some of the ancient canons upon the subject, made in England by the Pope's delegates, during the thirteenth century. In the constitution of Edmund, archbishop of Canterbury, A. D. 1236, 26 Hen. III., there is this direction:—'Item interroget sacerdos laicum diligentur, cùm in necessitate baptizaveret puerum; quid dixerit, etiam, quid fecerit. Et si diligenti præcedente inquisitione factâ sibi fide plenâ, invenirit laicum distinctè et in formâ ecclesiæ baptizásse, sive in Latino, sive in Gallico, sive in Anglico, approbet factum. Si verò baptizatus fuerit puer a laico, precedentia et subsequentia mersionem expleantur vel suppleantur à sacerdote.' 'When a layman has, upon urgent necessity, baptised a child, the priest shall enquire diligently with what words and acts it was performed, and if upon diligent enquiry he find, and is well persuaded, that the layman did distinctly, and according to the forms of the church, whether in Latin, French, or English, baptise the child, he shall confirm the proceeding: but in this case the rites preceding and following the immersion shall be supplied by a priest.' By another constitution of the same archbishop, order was given, that in case of child-birth the attendants should have water ready at hand to baptise the child if necessity required. The legantine constitutions of Otho the year following gave order that laymen should be instructed how to baptize; which was again enforced by the constitution of Otobon, another legate, in 1260. It would perhaps, under all circumstances, be difficult to decide the point, whether this earnest solicitude to prevent any child dying unbaptised was the effect of a deplorable superstition, or a profound policy on the part of the clergy, but evidently the compliance arose from ignorance on the part of the people. It is also certain, that in consequence of these institutions baptism became very prevalent, for we find a constitution of archbishop Peccham, in a provincial synod held at Reading in 1279, enjoining that baptism by laymen should not be repeated; and, in cases where it appeared doubtful, whether the child had been baptised, not that the form should be used, which is preserved in our liturgy. 'If thou art not already baptised, I baptise thee &c.' In the liturgy of Edward VI. there is internal evidence that

orm of private baptism was intended for the use f the laity, as well as the clergy, at least in cases f extreme danger. In the articles drawn up by he convocation, A.D. 1575, the twelfth takes otice of a doubt which had frequently arisen; amely, whether the form of private baptism ight be administered by laymen or no. The onvocation decided in the negative; but this rticle, though existing in the MS., was never rinted, and the question still remained till the onference at Hampton Court, which took place n the first year of the reign of James I., when the form itself was so altered as to exclude lay baptism altogether. Upon the whole, then, it appears 'that lay baptism is now excluded from the church of England, there existing no necessity for it, but that the church does not say that lay baptism is no baptism.'

4. The fourth enquiry is, what facts go to constitute baptism. These, with reference to the outward administration of it, are two; namely, the application of water, and the using of the original words of institution—'I baptise thee in the name of the Father, and of the Son, and of the Holy Ghost.'

The Baptists consider that it is an essential part of baptism that the subject should be applied to the water and immersed in it, for which reason many of them abstain from Christian communion with members of other churches, considering them as unbaptised persons. It is certain that the literal meaning of the word baptism is immersion, which is further confirmed by the practice of the ancient church; but whether immersion be essential to the constitution of the ordinance, is in our opinion a separate enquiry. The practice of sprinkling in some cases was adopted, and even justified by all the parties, as in the baptism of sick persons and weak children. It follows that baptism is valid where immersion is not used, and therefore that immersion is no essential part of it; besides which, there is a strong probability that in the baptism of the jailor, Acts xvi. 33, immersion was not resorted o. With respect to the practice of our established church, dipping appears to have been the egular and established mode, and was general at he Reformation; but, in 1644, when the Presbyterians had the ascendancy, the original practice f the church began to decline, and, after several enturies had elapsed, the present mode became niversal. It contributed not a little to the cause of sprinkling, that during the bloody reign f queen Mary, many of our Protestant divines, ying into Germany and Switzerland, and returning when queen Elizabeth came to the crown, rought back with them a great zeal for the protestant churches beyond sea, where they had een sheltered and received; and having observed, that at Geneva and some other places, aptism was administered by sprinkling, they ntroduced the same practice into the churches f England.

The next point essential to a valid baptism, is at it be administered 'in the name of the Fa-er, and of the Son, and of the Holy Ghost.' A ptism not thus administered, or administered thout water, the church of England considers baptism, and would insist on a proper submission to the sacrament. But sundry passages occur in the new testament which relate to the administering of baptism in the name of Christ alone, as Acts ii. 38; viii. 16; xx. 48; xix. 5; Rom. vi. 3; Gal. iii. 27; accordingly in St. Basil's time, the question was agitated, and some contended that baptism ought to be thus administered. But being baptised in the name of Christ implies being baptised 'in the name of the Father, &c.' because these were points in which all catechumens were instructed, and in which every baptised Christian was supposed to be established.

The following illustration of this subject, taken from Dr. Lightfoot's Harmony of the New Testament, Acts ii., is worthy the attention of the reader. 'Three thousand converted are baptised in the name of the Lord Jesus,' verse 38, which no whit disagreeth from the command, 'Baptise in the name of the Father, and of the Son, &c. Matt. xxviii. 19. For the form of baptism in these first days of the gospel, of which the New Testament giveth the story, may be considered under a threefold condition. 1. John the Baptist baptised in the name of Messias, or Christ that was then ready to come, but that Jesus of Nazareth was he, he himself knew not till he had run a good part of his course, John, i. 31, 32. The disciples baptising the Jews, baptised them in the name of Jesus, upon this reason, because the great point of controversy then in the nation about Messias was, whether Jesus of Nazareth were he or no. All the nations acknowledged a Messias, but the most of them abominated that Jesus of Nazareth should be thought to be he, therefore those that by the preaching of the gospel came to acknowledge him to be Messias, were now baptised in his name as the critical badge of their embracing the true Messias. But 3d, where the question was not on foot, they baptised in the name of the Father, and of the Son, and of the Holy Ghost. And so that baptising in the name of Jesus was for a season for the settling of the evidence of his being Messias, and when that was thoroughly established, then it was used no more; but baptism was in the name of the Father, and of the Son, &c. Of the same cognizance were those extraordinary gifts of the spirit evidences of Jesus his being the Messias, and means of conveying the gospel through the world, and when both these were well established, then those gifts ceased for ever.' See also his sermon on Matt. xxviii. 19, where it is proved that John baptized in the name of Messias now coming.

According to the general sentiment among Christians this sacrament can be received but once, thus expressed in the Nicene creed, 'I believe in one baptism for the remission of sins.' The cases mentioned in ecclesiastical history to the contrary, are derived from the re-baptising of persons who had been baptised by heretics, the validity of which the orthodox, or party baptising, denied and said that it was no baptism. The subject was therefore in those cases considered as an unbaptised person.

5. Our next object will be to illustrate the time, place, and manner of baptism. In the earliest ages of the church, there was no stated time or place for the reception of baptism. After-

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ome
efore
n that
d, it is
ut if only
to repeat
tised, may
The Greek
to the rite of
by complete

urch of England.
aptism among us
ire a particular de-
ion one or two of the
etween the form, as it
king Edward, and that
Prayer Book at present.
g the water did not make
king Edward's liturgy, as
t, because the water in the
and consecrated but once a
likewise itself was something
now used; and was introduced
rayer; that Jesus Christ, upon
he was baptised), the Holy Ghost
the likeness of a dove, would send
me Holy Spirit, to sanctify the foun-
ptism; which prayer was afterwards
the second review.—By king Edward's
the minister is to dip the child in the
e; 1st, dipping the right side; 2dly,
e 3d time, dipping the face toward the
trine immersion was a very ancient
the Christian church, and used in
the Holy Trinity; though some later
, it was done to represent the death,
resurrection of Christ, together with
ays continuance in the grave. After-
Arians, persuading the people that it
o denote that the three persons in the
re three different substances, the or-
it off, and used only one single immer-
the first common prayer of king
fter the child was baptised, the god-
godmothers were to lay their hands
d the minister was to put on him the
ment commonly called the chrysome,
, 'Take this white vesture, as a token
ocency, which by God's grace, in the
ment of baptism, is given unto thee;
ign, whereby thou art admonished, so
ou livest, to give thyself to innocence
hat after this transitory life thou may-
aker of the life everlasting. Amen.'
he had pronounced these words, he
oint the infant on the head, saying,
God, the father of our Lord Jesus
o hath regenerated thee by water and
host, and hath given unto thee remis-

of all thy sins; may he vouchsafe to anoint
with the unction of his Holy Spirit, and bring
e to the inheritance of everlasting life. Amen.'
his was manifestly done in imitation of the
practice of the primitive church.

The only human institutions connected with baptism in our established church, at present, are two, namely, sponsors and signing with the cross. Sponsors, or godfathers, called in ancient ecclesiastical writings, patrini, and ἀνάδοχοι, or susceptores, are mentioned as early as Tertullian. Cyril of Alexandria, A. D. 412, mentions the susceptor as saying Amen for the child baptised. It is also evident that in the second century there were attendants upon the children to be baptised, whose distinct office was to receive them from the priest, and who, it is highly probable, answered for them at the font; but that the practice was not used in the days of the apostles is evident, since it is not mentioned by Justin Martyr. The sign of the cross is a ceremony against which much censure has been levelled. It was used as early as the third century, and, although many efforts were made at the reformation to abolish it, has been carefully preserved.

Other customs, however, have by different churches, and in different ages, been introduced into the celebration of this sacrament, which are now totally disused, or retained only in the church of Rome. They may be enumerated in the following order: 1. Trine immersion, already alluded to, the practice of which commenced about the opening of the fourth century. Although prescribed in the English church by the prayer-book, 2 of Edward VI., this form was afterwards omitted. 2. Chrism, or unction, as mentioned by Tertullian, Cyprian, Cyril, and Chrysostom. It was performed with plain oil before baptism, and with unguent afterwards. 3. Tertullian mentions the practice of giving milk and honey to persons after baptism. This ceremony, which after a few centuries was discontinued, has been derived by some learned men from the Jewish customs at proselyte baptism. 4. Exorcism, or putting the baptised person upon his oath, and declaring to him his obligation to renounce sin, was used in the fourth century. This ceremony abounds with corruption in the church of Rome. 5. Candles lighted after baptism, and placed in the hands of the person baptised, as an emblem of the illumination of the spirit, was a ceremony used as early as the fourth century. 6. The chrisom, so called in the English church, was a white garment or surplice, put on immediately after baptism. 7. Easter and Pentecost were considered solemn times for the administration of baptism, as early as the second and third centuries. 8. Salt was not given to the baptised till the eighth century; nor, 9. The ears touched with spittle till the ninth.

6. Our sixth object will be to exhibit some of the most popular heresies which have prevailed at different periods respecting baptism. These arose chiefly in the second and three following centuries. 1. In the second century Marcion permitted women to baptise; affirmed that none but virgins, widows, or celibates, were fit subjects for baptism; and allowed baptism to be

repeated thrice. The Montanists baptised the dead. The Valentinians, instead of baptising in the name of the Father, &c. used a mystical form in the name of the Unknown Father of all things, in the Truth the Mother of all things, in him that came down on Jesus, in the union and redemption and communion of powers. Instead of using water they poured a mixture of oil and water on the head, after which they anointed the persons so baptised. 2. In the third century arose the heresy of the Manichees, who affirmed that baptism by water was not necessary to salvation, and accordingly neglected it. 3. The fourth century was remarkable for the heresy of Arius, who baptised in the name of the Son only. 4. Pelagius, in the fifth century, affirmed that infants were baptised for other reasons, and not because of original sin.

7. Several laws have passed in different ages for enforcing and restricting baptism. In the ancient church, baptism was frequently conferred on Jews by violence; but the church never seems to have allowed of force on this occasion. By a canon of the fourth council of Toledo, it is expressly forbidden to baptise any against their wills. That which looks most like force in this case, allowed by law, were two orders of Justinian; one of which appoints the heathens, and the other Samaritans, to be baptised, with their wives and children and servants, under pain of confiscation. By the ancient laws, baptism was not to be conferred on image-makers, stage-players, gladiators, aurigæ or public drivers, magicians, or even strolling beggars, till they quitted such professions. Slaves were not allowed the privilege of baptism without the testimony and consent of their masters; excepting the slaves of Jews, heathens, and heretics, who were not only admitted to baptism, but, in consequence thereof, had their freedom. Vossius has a learned and elaborate work, De Baptismo, wherein he accurately discusses all the questions concerning baptism according to the doctrine of the ancients.

8. Baptism for the Dead was a sort of vicarious baptism, formerly in use, where a person dying without baptism, another was baptised in his stead. St. Chrysostom tells us, this was practised among the Marcionites with a great deal of ridiculous ceremony. After any catechumen was dead, they hid a living man under the bed of the deceased; then coming to the dead man, they asked him, whether he would receive baptism? and he making no answer, the other answered for him, and said, he would be baptised in his stead; and so they baptised the living for the dead. Epiphanius assures us, the like was also practised among the Corinthians. This practice they pretend to be founded on the apostle's authority; alleging that text for it, If the dead rise not at all, what shall they do who are baptised for the dead? This text, indeed, has given occasion to a great variety of different systems and explications. Bosius enumerates no less than nine different opinions among divines concerning the sense of the phrase. St. Ambrose and Walafred Strabo seem clearly of opinion, that the apostle had respect to such a custom then in being; and several moderns are of the
same opinion, as Baronius, Jos. Scali
tellus, and Grotius. But Bellarmin, S
Menochius, and several other Roman
understand it of the baptism of tears,
nance, and prayers, which the living un
the dead; and thus allege it as a pro
belief of purgatory in St. Paul's day
protestant divines read the passage,
into death; and illustrate it by the cont
ticularly the words 'being buried with
baptism into death.' Paul, they say, i
the resurrection by that of our Saviour
strength of his argument is, (1 Cor. x
29.) 'If Christ be not raised, and if
rise not, what shall they do who are
into his death?' This appears the most
interpretation of the text.

Baptism of the Dead was a custo
anciently prevailed among some people
The third council of Carthage speaks
thing that ignorant Christians were
Gregory Nazianzen also takes notice of
superstitious opinion prevailing amo
who delayed to be baptised. In his a
this kind of men, he asks whether the
be baptised after death? Philastrins
it as the general error of the Montanists
phrygians, that they baptised men aft
The practice seems to be grounded
opinion, that, when men had neglected
baptism in their life-time, some com
might be made for this omission by re
after death.

Baptism of Bells, a superstitious
practised in the church of Rome, wh
bell was supposed to be rendered ca
driving away tempests and devils.
taken notice of in the capitulars of Ch
Great. Baronius carries its antiquity
than the year 968, when the greatest b
church of Lateran was christened by p
III. In 1581 it was complained of in
tum gravamina of the German nation,
in the public diet at Nuremberg. In
mony the bell was provided with godfat
made responses, and gave it a name; a
they clothed it with a new garment, as
used to be clothed on coming out of th

Baptism, Fire, spoken of by St.
the Baptist, has occasioned much c
Some of the fathers held that believe
they enter paradise, are to pass throu
tain fire, which is to purify them fr
maining pollutions. Others, with
understood it of the fire of hell; othe
of tribulation and temptation. Others,
Chrysostom, will have it to denote an a
of graces. Others suppose it to mean th
of the Holy Ghost on the apostles, in th
fiery tongues. Lastly, others maintai
words 'with fire' are an interpolatio
MS. copies of St. Matthew, indeed,
words; but still they are to be found in
and St. Luke. The ancient Seleucians
minians, understanding it literally,
that material fire was necessary in the
tration of baptism. But we do not fin
to what part of the body, they appl
whether they were satisfied with c

person baptised to pass through the fire. Valentinus, according to Tertullian, rebaptized all who had received water baptism, and conferred on them the baptism of fire. Heracleon, cited by Clemens Alexandrinus, says that some applied a red hot iron to the ears of the person baptised, as if to impress some mark upon him! If many of the plainest texts of Scripture had not been misconstrued by ignorance, and darkened by knavery, one would be surprised that ever this text should have occasioned the smallest controversy. The context suggests one good interpretation. The Baptist spoke to a mixed multitude, many of whom were or would be believers, and many of whom never did believe the gospel. He therefore tells them that One, mightier than he, should baptise them (the one class) with the Holy Ghost, and (the other) 'with fire;' that he will thoroughly purge his floor and gather his wheat into his garner; but he will burn up the chaff, &c. Other passages of the New Testament speak of a 'fiery trial,' which is to try all faithful believers, as no 'strange thing,' 1 Pet. iv. 12; and Jesus Christ, alluding to his own sufferings, assured his immediate followers 'that they should be baptised with the baptism wherewith he was baptised.' Probably therefore we unite the best interpretations of the passage by considering it to refer to the baptism of the day of Pentecost literally, and symbolically to the Christian's share of afflictions in this suffering and vain world.

BAPTISTS, a general name by which those Christians are distinguished who deny the validity of infant baptism, and restrict the administration of that sacrament to persons capable of believing and understanding the religion into which they are thus initiated. They also maintain generally that immersion is necessary to constitute a scriptural baptism. Like all other denominations of Christians, they call in the evidence of antiquity; and their pretensions, if founded on fact, as will be seen hereafter, are considerable. They affirm that infant baptism was unknown before the third century, was established in the fourth and fifth, and prevailed generally till the Reformation; that even in the dark ages some traces of pure baptism are discernible; that the ancient British church, before the arrival of St. Austin, did not baptise infants; that Bruno and Berengarius in the eleventh century, the Waldenses, the Lollards, and the Wickliffites, opposed infant baptism, together with William Sawtre, the first Lollard martyr in England, who was burnt A.D. 1401, in the reign of Henry IV. This is certain, with respect to their antiquity, that at an early period of the Reformation disputations were held at Zurich, Bale, and Berne, upon infant baptism.

To the class of Baptists belong the ancient Novatians, Cataphrygians, the Donatists, the Anabaptists and Mennonites of Germany, and others, who, though they differed widely in their opinions upon other subjects, held the same general views with respect to the initiatory sacrament.

Although the term Anabaptist has been promiscuously used as a general name by which to distinguish Baptists or re-baptisers, still we must distinguish between the Baptists in general and the Anabaptists of Germany, for which see article Anabaptist. It would be equally uncandid and unjust to confound, with the latter enthusiasts, so respectable and consistent a body of Christians as the Baptists are, merely from a coincidence of opinion on the subject of baptism, especially since the wild doctrines of the latter on the subject of civil government have always been disclaimed by the former, although it must be confessed a difficulty to distinguish them for some years after the Reformation.

The Baptists in England separate from the establishment for the same reasons as their brethren of the other denominations do; and from the additional motives derived from their particular tenets respecting baptism. The constitution of their churches, and their modes of worship, are congregational or independent; in the exercise of which they are protected in common with other dissenters, by the act of toleration. Before this act they were liable to pains and penalties as nonconformists, and often for their peculiar sentiments as Baptists. A proclamation was issued out against them, and some of them were burnt in Smithfield in 1538. Many of them were persecuted as Anabaptists in the reign of Elizabeth, charged with holding opinions which tended to anarchy. Indeed, during the latter part of Elizabeth's reign, the powers of the Star Chamber, and the High Commission, had almost destroyed dissent; the Baptists fled the country, and settled principally in Holland. Mr. Smyth, a beneficed clergyman who had seceded from the establishment, founded a Baptist church of English refugees at Amsterdam. He appears to have been an Arminian in point of sentiment; but in his settlement over this people we have the earliest evidence of the existence of regular Baptist churches. Mr. Smyth died in 1610, and was succeeded in his ministry by Thomas Helwisse, who shortly after returned with his congregation to England, and settled in London. The severities exercised by king James I. at this time against the Puritans and Baptists, called forth some able writings in explanation and defence of their principles. A petition was presented to parliament in 1620, after which the Baptists were legally acknowledged as a body distinct from the Anabaptists, although considerable prejudice existed against them, even to the time when bishop Taylor wrote his Liberty of Prophecying. It was particularly unhappy for their cause that the fifth monarchy men, of Cromwell's time, were chiefly Baptists. The year 1633 affords us the earliest records remaining of a particular baptist church in London, formed under a Mr. Spilsbury. The persons who formed this congregation had separated from one of the independent persuasion; and, conceiving the right of administering baptism to descend in uninterrupted succession, sent one of their members over to Holland to receive that ordinance, and bring it over to them.

They might, it is true, have received baptism from some member of Mr. Spilsbury's congregation; but that body being Particular or Calvinistic Baptists would not have any connexion with the Arminian or General Baptists. Between these two denominations there never was much intercourse, nor is there at the present day. After the murder of Charles I. both the Baptists and Independents suffered much from the intolerant spirit of the Presbyterians; but in the short parliament of Cromwell, commonly called 'Praise God Barebone's parliament,' from the circumstance of Mr. Barebone, a Baptist minister, having made himself conspicuous in it, the Baptists appear to have had some influence. Great suspicion, nevertheless, rested upon them generally; especially as amongst the Baptists at that period were found some who opposed the Protector's government, and advocated republican principles, and others who believed the near approach of Christ to reign upon the earth, and were ever ready to promote by the sword the establishment of what was called by way of contempt the fifth monarchy. A conspiracy of the fifth monarchy was defeated by Cromwell, in 1650, and Harrison, the regicide, at their head, was imprisoned for life; but upon the restoration the Baptists publicly disclaimed Anabaptist principles, and presented the king with a confession of their faith. A second conspiracy of the same deluded class took place in 1661, after which the Baptists repeated their disavowal of Anabaptist principles, and, with the exception of their sufferings in common with their dissenting brethren during the period between the Restoration and the Revolution in 1688, from the rigorous measures employed to compel them to conform, neither the general nor particular Baptists have since that period suffered any considerable molestation. The particular Baptists, at a general assembly held in London in the year 1689, professed their belief in the distinguishing doctrines of Calvinism, which are still the general sentiments of all their churches. As a body they are highly respectable, and rising in importance. They have several academies for the education of students for the ministry in their congregations, the oldest of which is at Bristol; and also two exhibitions for students to be educated at one of the universities in Scotland, given them by Dr. Ward of Gresham college.

Both the particular and the general (or Arminian) Baptists had formerly messengers of their churches who exercised a species of episcopal authority; but their only church officers, at the present time, are ministers or pastors, and deacons. Their churches are not parochial, or confined to certain districts, but congregational and independent, every congregation being empowered to prescribe its own rulers. The meetings of the messengers and members of the different congregations are not for the general government of the body, but for mutual advice and encouragement.

A considerable controversy has of late agitated both the above denominations of Baptists, on the question of open communion, namely, whether persons who have been baptised in infancy may be admitted without any further baptism to the other sacrament when they arrive at years of discretion, provided in other respects they are thought proper persons. On this particular the teachers of both denominations are much divided in opinion, and frequent pamphlets have been written on both sides.

SCOTCH BAPTISTS, a denomination of
Christians in Scotland, who profes
their original from the apostolic age.
of the initiatory sacrament, and
against the validity of infant bapti
same as those held by Baptists g
their collateral opinions, especially
ject of church government, are pec
stand in no particular connexion wi
class of Baptists, either abroad or
although they have churches and
their own communion in London
places. It was not known till late
ciety of Baptists had existed in Sco
1765, but now the fact is ascertained
society did really exist, and usually
Leith and Edinburgh as far back a
of the last century. At the period
luded to, the Baptist profession publ
first in Edinburgh and afterwards in
so that now there are disciples and
all parts of the kingdom.

They are generally remarked for
and love to each other, to which is s
firmness in maintaining their religio
I. They hold, from the New Test
each church planted by the apostles
congregation, and met together in
Acts ii. 1. 46; iv. 31; and v. 12
18. 20; so that it was composed of
lievers; 1 Cor. i. 2; Philip i. 1;
that it had a plurality of elders, or
rule and labor in the word and doct
xiv. 23; xx. 17; Philip i. 1; Titus
v. 17; also a plurality of deacons
in the proper application of the chur
Acts vi. 1—17; Philip i. 1; and
were chosen not by their academi
but by their characters laid down in
1—16; Tit. i. 5—10; and set apart
on of hands; Acts vi. 6; 1 Tim. iv
II. They aim at the faithful and im
cise of discipline, according to the
laid down in the New Testament; Ma
17; 1 Cor. v.; 2 Thess. iii. 6—15;
Tit. iii. 10, 18. Gal. vi. 1 Jude 22,
discipline, they say, is essential to th
of a christian church; but altogeth
cable in any other society. III. T
none into church-fellowship but suc
scriptural profession of their faith in
show their readiness to observe wh
enjoins; and they retain none in
munion who visibly depart, in any in
the faith and obedience of the gos
proof against all the instituted means
IV. They hold that the rule of fo
divine revelation, making all due a
differences in natural tempers, capac
in grace, &c. and exercising all lo
lowliness, and meekness, in their e
reclaim an erring brother. V. They
their duty to be all of one mind, in
that regards their faith and practice
Acts iv. 32. 1 Cor. i. 10. 2 Cor. xiii
i. 27. ii. 2. 1 Pet. iii. 8. Nothing
among them by human influence o
by majority of votes, but by the una
sent and explicit agreement of eve
VI. They meet every first day of t

s and ends given in Matt. xxvii. 1—7. xxiv. John xx. 19, 26. Acts ii. 1. xx. 7. . xi. 18. 20. xvi. 2. Rev. i. 10. When bserve the following institutions of divine ip: 1. The public reading of the scrip- of the Old and New Testaments, from what tten, Acts xv. 20, 21. Col. iv. 16. 1 Thess. 1 Tim. iv. 13. 2. The mutual exhorta- f the brethren, which is attended to on the ng of Lord's day, immediately after the read- the scriptures. Col. iii. 16. 1 Thess. iv. 18. iii. 13.; x. 24, 25. 3. Preaching and ex- ling the word, which is done by the elders astors. 1 Pet. v. 2. 1 Tim. v. 17. Acts v. . 20. 2 Tim. iv. 2. 4. The public prayers, nly of the elders, but also of the brethren, s exemplified in the first churches. Rom. 2. 1 Cor. xi. 4. xiv. 14. Eph. vi. 18. n. ii. 1, 2. Jas. v. 16. Jude 20. To these rs and thanksgivings, the whole church say n. 1 Cor. xiv. 16. 5. The singing of e. Matt. xxvi. 30. 1 Cor. xiv. 15. In which they use the Psalms of David, and spiritual songs. Eph. v. 19. Col. iii. 16. he fellowship, contribution, communication, bution, or well doing, as in Rom. xvi. 26. r. ix. 13. Philip. iv. 14, 15. 1 Tim. vi. Heb. xiii. 16. i. e. the collection for the ort of the poor saints, and other necessary . See Acts ii. 41. and 1 Cor. xvi. 1, 2. he breaking of bread, or the Lord's supper: they observe every Lord's day without any rd to preparation and thanksgiving days, as church at Troas came together chiefly for end on the first day of the week. Acts xx. 7. n the interval of public worship, they have east of charity, in an appropriate place, and rally contiguous to the ordinary place of ting for worship, where every member may d. Its nature is to promote love, pleasure, har- y, and mutual edification among the brethren, for disengaging the minds of the members, the time and care spent in preparing a diet eir own houses on that day; for refreshing e who come from a distance, and for affording derate repast to the poorer members. These feasts they deduce from the apostolic ches. Acts ii. 46. xx. 11. 1 Cor. xi. 20, 22. Jude 12. 2 Pet. ii. 13. VII. They ider it their duty to join fasting with prayer, articular occasions. Matt. ix. 25. Acts xiii. mpare Isaiah lviii. 5. with James iv. 8—10. . They use the kiss of charity on various sions; such as, the reception of a new mem- the forgiveness of offences, the reconciliation fferences, the setting apart of office-bearers, departure or return of brethren, &c. Rom. 16. 1 Cor. xvi. 20. 2 Cor. xiii. 12. 1 Thess. . 1 Pet. v. 14. IX. They wash the saints' even literally, and that not as a ceremony, whenever it can be of real service to a bro- ; the men perform that service to those of own sex, and the women to their's only. xiii. 14, 15. X. They abstain from eating ood and strangled, or 'flesh with the blood of;' because these were not only forbidden oah and his posterity. Gen. ix. 3, 4; but under the gospel. See Acts xv. 28, 29. xvi. d xxi. 25. Rev. ii. 20. 24. and ver. 52. XI. They do not find themselves at liberty to eat a common meal with persons excommunicated from their fellowship; but they do not set aside any natural or relative duty. Matt. xviii. 17. Luke xv. 2. Acts x. 28. 1 Cor. v. 9, 10, 11. And XII. They consider themselves subject to the powers that be in all lawful civil matters, Rom. xiii. 1—6. 1 Pet. ii. 13—16. to honor them, ver. 17. pray for them, 1 Tim. ii. 2. pay them tribute, Rom. xiii. 6, 7. and rather to suffer patiently for a good conscience, than in any case to resist them by force. Acts v. 29. 1 Pet. ii. 19—24. Therefore they can have no fellowship with any who are known to be disaffected to government; Prov. xxiv. 21.

BAPTISTERY, in ecclesiastical writers, was one of the exedræ, or buildings distinct from the church itself; and consisted of a porch or antiroom, where the persons to be baptised made their confession of faith, and an inner room, where the ceremony of baptism was performed. Thus it continued till the sixth century, when the baptisteries began to be taken into the church porch, and afterwards into the church itself. The ancient baptisteries were commonly called φοτιϛηρια, photisteria, q. d. places of illumination; either because that name was sometimes given to baptism, or because they were the places of an illumination, or instruction, ,preceding baptism; where the catechumens were taught the first rudiments of the Christian faith.

Baptisteries in general are either octagonal or circular, surmounted with a dome, and as the font is usually placed at the entrance of the church to represent the initiation of the new christian, so the baptistery is situated at the approach to the western or principal gate. These edifices are of very high antiquity, since one was prepared for the ceremonial of the baptism of Clovis; and, as the times of baptising returned but seldom, they have been usually very capacious. In Italy, although the churches were numerous, in some of the most considerable cities there was only one general baptistery, to which they all resorted. This was dedicated to John the Baptist, and the church to which it was attached, assumed the pre-eminence connected with the church of Santa Sophia. At Constantinople was a spacious baptistery, in which we read of ancient councils assembling. Of the baptisteries of Rome, the Lateran is the most ancient, in which some antiquaries are said to have discovered the remains of the Thermæ, anciently within the precincts of the imperial palace. The baptistery of Pisa, both externally and internally, presents a fine display of the most exquisite workmanship, and accordingly has greatly excited the admiration of modern travellers, among whom we may distinguish the celebrated Joseph Addison. The baptistery of Florence is remarkable for the beauty of its gates. Here also are to be seen the bas reliefs, of which Michael Angelo was so enamoured, that he exclaimed they deserved to be portals of paradise. The Italian baptistery in appearance is not very dissimilar to the octagon in Ely cathedral at the intersection of the transepts and nave; but it does not appear from history that any building especially devoted to the purpose of baptism, was ever erected in England. Many of the fonts in our churches are nevertheless highly interesting to the antiquarian, that of Bridekirk in Cumberland is of Danish origin, and that which was removed from the church of St. Peter in the east, Oxford, exhibited proofs of an antiquity almost as early. See FONT.

Upon fonts and baptisteries in general, the following curious inscription is frequently found, especially upon those which are ancient: 'ΝΙΨΟΝ ΑΝΟΜΗΜΑΤΑ ΜΗ ΜΟΝΑΝ ΟΨΙΝ.' The pious monks often exercised their gifts in forming acrostics and chronograms; but this line exhibits the happiest instance of the amphisbæna; the words being exactly the same whether we read the line backwards or forwards.

BAPTIST MISSION.—While the Missionary Societies of various denominations have an ulterior object in view, too high and sacred for much discussion in books of human science, there are collateral benefits to mankind, which gradually accompany their march, that fall strictly within our sphere to record. The bearing of these societies, on our acquaintance with the physical and political geography of the globe, and on the study of its languages, ancient and modern, is obvious: while the very object alluded to, and a missionary ardor for its accomplishment, has armed, and will arm, the traveller and the scholar (when a missionary), with a patient and persevering zeal, to be imbibed, perhaps, in no other school. It will be principally to the literary and scientific aspect of these institutions that we shall, in this work, direct the attention of the reader; but we purpose, in so doing, to insert a slight sketch of the rise and progress of all the reputable societies of this kind.

Among Protestants, it may be said, that in 1732 the Unitas Fratrum, or Moravian brethren, led the way in these benevolent enterprises. They became deeply impressed with the fact that so many millions of the human race were sitting in darkness, and held in bondage by idolatry and vice; and they formed themselves into a small society for endeavouring to convey the benefits of Christianity to heathen nations. At first their beginnings were very small, but they now possess between forty and fifty settlements, employing from 160 to 180 missionaries. For sixty years this society pursued its way, in the most unostentatious and silent manner, before any others of a like nature were formed.

Oct. 2, 1792, a few Baptist ministers meeting at Kettering, Northamptonshire, entered into a series of resolutions for the formation of a society, to be called The Particular (or Calvinistic) Baptist Society for propagating the Gospel among the Heathen. 'But so far,' say they, 'were we from having in view the exclusive promotion of our own peculiar principles as Baptists, that we were determined from the beginning, if no opportunity appeared for sending out Missionaries of our own, that we would assist other societies already in being amongst the Presbyterians and the Moravians.' The names of the first committee were John Ryland, Reynold Hogg, William Carey, John Sutcliff, and Andrew Fuller. Reynold Hogg was chosen Treasurer, and Andrew Fuller, Secretary.

Nov. 13.—The committee meeting ag
Northampton, learned that a Mr. John Th
a surgeon, who had been several years in
gal, and during that period had occasi
preached the gospel to the natives, was th
London. He was said to be endeavour
establish a fund for a mission to that co
and to be desirous of engaging a compan
return with him. Enquiry was made conc
Mr. Thomas, as to his character, principles,
and the accounts which were received p
satisfactory, the committee resolved to invi
to go out as one of their missionaries, and
deavour to furnish him with a colleague.
Carey, on being asked if he were will
accompany Mr. Thomas, answered readily
affirmative. And thus was furnished to t
ciety one of the most useful laborers
missionary field, and ultimately one of th
profound of oriental scholars, from the h
station of an uneducated provincial diss
minister.

The next step was to calculate the expe
sending them out, and to obtain the me
defraying it. The expense was estima
£500, which sum required to be raised in
three or four months. To accomplish th
committee frankly stated to the religious
their plan, requesting that so far as it ap
to be deserving of encouragement, they
encourage it. Letters also were addressed
most active ministers of the denomination thr
out the kingdom, requesting their concu
and assistance. The result was, that mo
twice the sum which had been asked fo
collected; yet, when the work was finishe
actual expense had so far exceeded the est
that there were only a few pounds to spar
principal cause of this was, that the whole
new missionary's family were induced
company him.

The first laborers in this mission sail
June 13, 1793, on board the Princessa
a Danish Indiaman; but no tidings of the
ceedings arrived in this country until July
following year. For the first three or four m
it seems, Mr. Carey found himself in co
able pecuniary difficulties. The inve
which was taken out for their immediat
port, was sunk; and he, with his wife and
in a foreign land, were utterly destitute
means of subsistence. He now, therefo
quired for secular occupation; and ea
March, 1795, received an invitation from M
take the superintendance of an indigo factor
colleague also, Mr. Thomas, who had stop
Calcutta, under an idea of supporting him
his profession, received, a little before, a
invitation.

Mr. Carey accepted the superintendenc
indigo factory at Mudnabatty, and Mr. T
of another at Moypauldiggy, both in the
bourhood of Malda. Here they considere
selves capable of watching the best oppo
for proceeding with their noble undertak
coming out; and letters were sent to E
expressing their great pleasure in being
decline, at present, any further assistan
the Society's funds.

At home, about this time, two young men, Mr. Jacob Grigg, and Mr. James Rodway, had offered themselves as missionaries, and being considered suitable persons, the committee resolved on another mission, i. e. to Africa, in the neighbourhood of Sierra Leone. In the autumn of 1795, the missionaries left England; but through the indiscretion of one of them, and the ill health of the other, the undertaking failed. In the spring of 1796, a Mr. J. Fountain offering himself as a missionary, was accepted, and sent out to join his brethren in India.

During the first year of his residence, Mr. Carey had repeated attacks of an intermittent fever with a dysentery. Mrs. Carey also, and their eldest son, were much afflicted; and their third son, Peter, died at five years of age. As soon as they were able to apply themselves to the work, they set up schools at their respective factories; preached every Sunday, and frequently on week days; and Mr. Thomas being particularly attentive to the poor, in administering medicines, &c. to them; many people, besides the workmen, attended their preaching. Two Englishmen, a Mr. Long and a Mr. Powell, who had settled in Bengal; joining in the views of this little band, on Nov. 1, 1795, they, with the missionaries, formed a church, and commemorated the sacrament of the Lord's Supper. Mr. Long was afterwards excluded for improper conduct; but Mr. Powell continued an useful character till his death, which was at Dinagepore, on Sept. 25, 1802. An European or two were joined to this body, from 1796 to 1800; a spirit of enquiry was awoke among the natives, and a school erected at Dinagepore; but no native converts manifested, as yet, sufficient boldness to shake off caste for the benefit of the new faith.

The missionaries, however, were not easily discouraged. They requested new helpers from home, and particularly some one who should understand the printing business. Accordingly, in the spring of 1799, Mr. and Mrs. Marshman, Mr. and Mrs. Grant, Mr. and Mrs. Brunsdon, Mr. William Ward, and Miss Tidd, embarked for India. Mr. Ward being a printer, and Mr. and Mrs. Marshman having kept a school. Their instructions were, to 'beware, both from a principle of conscience, and from a regard to their own interest, and that of the mission, of intermeddling with any political concerns—to be obedient to the laws in all civil affairs—to respect magistrates, both supreme and subordinate, and teach the same things to others—in fine, to apply themselves wholly to the all-important concerns of that evangelical service to which they had so solemnly dedicated themselves.' Moreover, that 'however gross might be the idolatries, and heathenish superstitions that might fall under their notice, they should scrupulously avoid all rudeness, insult, or interruption, during the observance of such superstitions, observing no methods but those of Christ and his apostles, namely, the persevering use of scripture, reason, prayer, meekness, and love.'

Mr. Carey was anxious that the new missionaries and their wives might be permitted to proceed and settle in the neighbourhood of Malda. He had taken a small place at Kidderpore, about twelve miles distant, where he intended to carry on a little business, and to erect some dwellings for them. The relinquishing of this undertaking would be a loss of £500. But the British authorities were inflexible in their opposition to his plan of increasing his establishment. Mr. Carey, therefore, determined to remove to the Danish settlement of Serampore, where his brethren had arrived.

This important step was accomplished January 10, 1800, and the next day he was introduced to the governor, who received him in a very friendly manner. The first object of attention was to settle a plan of internal government. All the missionaries determined to consider themselves as one family; they were to preach and pray in turn; one to superintend the affairs of the family for a month, and then another. Mr. Carey was appointed treasurer and keeper of the medicine chest; Mr. Fountain librarian. Saturday evening was devoted to adjusting any differences which might arise during the week, and pledging themselves to love one another; finally, it was resolved that no one should engage in any private trade; but that whatever was done by any member of the family, should be done for the benefit of the mission.

The first sheet of the Bengalee New Testament was printed May 16. They worked off 2000 copies, besides 500 of the gospel by Matthew, for immediate distribution. Early in June they opened a Bengalee school, in which the children of those natives who chose to send them, were taught gratis; and by the 20th of July they had forty pupils. A native, named Gokool, also appeared exceedingly attentive to their ministry. On the 22d of December, Gokool, and a man named Kristno, came and ate in public with the missionaries, by which act they threw off their caste. All who witnessed it were surprised; it was so universally said, No one would lose caste for the Gospel.

'Thus the door of faith is opened to these Gentiles—who shall shut it?' said Mr. (now Dr.) Marshman. 'The chain of the caste is broken, who shall mend it?' The same evening Gokool, without his family, and Kristno with his, came and offered themselves willingly to the church, each making a solemn profession of faith in Christ, and of obedience to his commands. It was soon noised abroad that these people had lost caste; and now a time of trial drew near. The next day a great company of people assembled, two thousand or thereabouts, pouring out their execrations upon them. Taking them by force, they first dragged them before the Danish magistrate; but he, instead of censuring, commended them for what they had done. Being dismissed, they came a second time with Kristno with a new charge, accusing him of refusing to deliver up his daughter to a man who had contracted for her in marriage. The magistrate, however, defended Kristno, and assured the girl that she should not be compelled to marry the man against her consent. The governor also promised the missionaries that they should not be interrupted in baptising. The hubbub that had thus been raised, did not shake the resolution of Kristno; but his family, and Gokool, were intimidated by it. On the 27th they sent to the mission-house, saying, 'they wished to put off their baptism for a few weeks.' The next day (the 28th) was the time appointed for baptising. Kristno came forward, and with Felix Carey, was baptised in the Hoogly. A considerable number of Europeans and natives attended; many of whom appeared to be struck with the solemnity of the ordinance. Shortly after, a Mr. Fernandez, and Joymooni (Kristnoo's wife's sister), were baptised, and joined the church. At a meeting on the 22d, she said, 'She had found a treasure in Christ greater than every thing else in this world.' Kristnoo said his chief 'thoughts now were about the salvation of others.'

The effect of these baptisings was, that all the children of the Bengalee school were taken away by their parents, lest they should be made Christians; and the only children left for instruction were those of Kristno, to whom the missionaries now paid the greater attention, and amongst whom there were some hopeful appearances. The baptised Hindoos appeared to improve much in knowledge and affection. Their manner of speaking was singular and impressive. 'Christ (said one) is my joy, my hope, my all. If worldly things draw my mind from him, I say, mind, why dost thou leave Christ? There is no other Saviour. If thou leave him, thou fallest into hell.' 'I was formerly,' said another, 'in prison; the light of the Gospel came to the prison door, and I got out!'

About this time Mr. Carey was appointed by Marquis Wellesley to a professorship in the New College of Fort William. When an application was made to him on the subject, he had some hesitation as to complying with it, lest it should interfere with his proper work as a missionary. Nor did he accede to the appointment till he had consulted with his brethren, who thought that it might promote rather than obstruct the great objects of the mission. Every temporal advantage that might arise from it would, on the ground of their established rules, be only so much added to the missionary stock. And here let us add, that steadily, and when these advantages have risen to several thousands per annum, has this good man added them to that stock.

On the morning of May 8th, during our short war with the Danes, the British flag was hoisted at Serampore. At ten o'clock the missionaries were ordered to appear at the government house. On presenting themselves, they were treated with the utmost civility, both by the late Danish governor, and the English commander, and told to go on with their school, preaching, &c. in the same peaceable way as before.—On the 29th, Gokool, who had fainted at the outset, came forward again, and on June 7th, he was baptised. Kristno was now in the habit of talking to his neighbours who came to him at his work, in some such strain as this:—'In all your worship there is no fruit. None of the debtas died for sinners; but Jesus Christ came into the world for this. This is the greatest love I ever heard of. At the house of the missionaries I have seen such love as I never saw before. When a man believes in Christ he gets a new mind. This is the fruit of becoming a Christian, &c. &c. The missionaries from such specimens hoped that he would soon be able to preach Christ to his countrymen.

During this month, Mr. Ward and Kristno visited certain parts of the country from whence persons had come for religious instruction, preaching and distributing papers as they proceeded; and some of the women went to visit their female relations up the country, where they also conversed about the gospel. Mr. Ward in his excursion was detained by a police officer, on the ground 'that the company had given no orders for the natives to lose caste.' Mr. W. assured him that the papers were entirely religious; and on his offering to sign them with his own name, the officer released him. The papers thus signed were sent to Calcutta, and examined. Some alleged, that it was improper to attack the religion of the natives; but others answered that there was nothing more in the papers than had been always tolerated in the Roman Catholics in the company's territories. Nothing therefore came of it; and during the administration of Marquis Wellesley, no more was heard of the subject.

In the course of this year, colonel Bie transmitted to his government an account of the settlement of the missionaries at Serampore, in consequence of which his Danish majesty directed the Royal College of Commerce at Copenhagen to signify his pleasure to the governor of Serampore, that the society of missionaries be considered as under his majesty's protection and patronage, which they accordingly signified by a letter, bearing date Sept. 5, 1801. The governor-general also of British India was pleased to assure one of the missionaries, that he 'was perfectly acquainted with all the concerns and operations at Serampore, and felt great satisfaction at their affairs being attended with a degree of success'.

In the beginning of 1802 the mission had baptised seven natives.

On the 4th of April, a native who had previously lost caste, of the name of Syam Dass, was baptised. He proved to be a simple-hearted good man, and was instrumental to the conversion of one of his neighbours, Bharut; but died, or was murdered on a journey in the autumn of the same year, about five months after his baptism. About this time a brahmin came to Serampore, who lived with Dulol, a famous leader of a Hindoo sect. They are a kind of Deists, setting light by the superstitions of the country, and by the caste; but making light also of sin, and a future state. He said that Dulol sent him to get baptised first, and that he himself would follow, and bring with him an hundred thousand disciples! The missionaries had no faith in this tale; but thought it right to pay him a visit. Mr. Carey, Mr. Marshman, and Kristno (who had formerly been one of his disciples) therefore set off for Ghospura, the place of his residence. They perceived him to be what they expected, a designing man, living in state only upon the credulity of his followers.

On May 10th, Mr. Ward and Mrs. Fountain re married. Heretofore the marriages had en performed by an English clergyman; but e missionaries having been advised to marry eir own people, they, with the concurrence of e civil authorities, drew up a simple form for e purpose; and the business was conducted to e satisfaction of all present. In June or July ve more natives were baptised at Serampore. owards the end of this last month, a Mussulan, whose name was Moorad, came from Ponche-luckphool, or as they usually call it by way of ontraction, Luckphool, with an invitation from considerable number of people in that part of he country to go and preach the gospel to them. Mr. Marshman, accordingly, set out on the 10th f August, taking Petumber Mittre and Bharut ith him. At Luckphool, they halted under a arge tree, which was the appointed place for earing; the people came together and received hem sitting down on the grass, and after having eard with much earnestness for about half an our, entreated the preacher to rest, and take efreshment. He did so, and then renewed his ubject. They spent the evening, sitting round him, and asking questions on Christ, the resurrection, a future state &c.

These people, amounting to some hundreds, had, for the last fourteen years, begun to dislike the idolatry of the country; and attaching themselves to a grave elderly man, as their goroo or teacher, had from that time been enquiring after the right way. Neelo, for that was the old man's name, had taught them that there was one God, whom he called father, who alone was to be worshipped; that sin was to be forsaken; and that a farther revelation was to be expected. It was in consequence of his having heard of the missionaries that Moorad was sent to Serampore, to request them to come and visit them. fter the worship, as above related, the old man ok Mr. Marshman aside for private conversan, and appeared to be very averse to Brahminm, and friendly to the gospel as opposed to it; ommending it also to his people, as being the velation which he had given them to expect. returning home, Mr. M. called on another oo, who had nearly 20,000 followers. His me was Seeb Ram Dass, and his residence at ggerdandakatty. There was much less pomp d artifice in him than in Dulol; and less contion and affection than in Neelo, and his ople at Luckphool. The general impression as, that these people were loosened from the indoo and Mahommedan systems, which marked e hand of providence, and might be introducry to the gospel.

During this year Mr. and Mrs. Chamberlain ere sent out by the committee to assist in the bors of the India mission. About the same me, the missionaries purchased the house and emises adjoining their own. The garden and t-buildings contained more than four acres of nd. By this addition they had room not only r the schools, and for the printing and binding siness, but also for any new missionaries that ght arrive. They made themselves trustees r the society, as they had done in the first purase. Towards the end of January, 1803, besides the New Testament, the first volume of the Old, the Psalms, and a part of Isaiah, were finished, and began to be a good deal read in different places. A new fount of Naggree types was nearly completed; and a house was taken in Calcutta for preaching to both Europeans and natives.

In February they speak of 'the affairs of the mission growing more and more weighty.' Several new enquirers arrived; amongst whom was Sheetaram, a sooder, from Bishoohurry; in Jessore, and who on the 27th was baptised. The zeal, the simplicity, and the good conduct of this man proved, as will be seen, a great blessing to several of his relations and neighbours.

In April two of the native converts intermarried. The ceremony was conducted much in the same way as Mr. Ward's had been. Mr. Carey, after explaining the nature and ends of marriage, and noticing the impropriety of the Hindoo customs, read certain portions of scripture, and after them the marriage agreement. The parties then joined hands, promised love, faithfulness, obedience, &c.; then signed the agreement, to which others added their names as witnesses. A prayer for a divine blessing followed, and the whole was concluded with a temperate and cheerful repast of raisins, plantains, &c. The day following they had a supper at the house of Kristno, the bride's father, where all sat down together without distinction of color or country. This to the spectators was quite a new thing. During this month several of the native brethren, as Kristno, Presaud, Ram Roteen, &c. went into the villages to talk with the people about Christ. They were treated with abuse, but bore it with Christian meekness, telling their abusers, that they 'only did what every sect did, who, whether Hindoos or Mussulmans, were allowed to perform their poorjahs in the streets; and that insults, stripes, and even death were good for them, so that God by them did but turn their hearts.'

Frequent additions were now made to the Baptist flock here; nor did the diligence of the missionaries slacken in their noble work of translating the scriptures.

In August, a new and improved edition of the Bengalee New Testament was begun, as only 600 copies remained of the first impression. In September, the convert, Gokool, seemed to be drawing near his end. But his mind was steadily fixed in the faith of Christ, and on the 7th of October he died. 'About two hours before his death,' says Mr. Marshman, 'he called the native brethren round him to sing and pray. He was perfectly sensible, resigned, and tranquil. Some of the neighbours had been trying to persuade him to employ a native doctor; but as all their medicines are accompanied with heathen incantations, he refused them, saying, he would have no physician but Jesus Christ. 'How is it,' 'said they, 'that you, who have turned to Christ, should be thus afflicted?" My affliction, replied he, is on account of my sins: my Lord does all things well. Observing Komal to weep (who was a most affectionate wife) he said, Why do you weep for me? His tranquil and happy end made a deep impression on all around. They said one to another, May my mind be as Gokool's was.' His funeral, in the European manner, made also a considerable impression on the natives. On the 23d, a brahmin from Assam was baptised.

During this year, the society presented a copy of the Bengalee New Testament, and of the pentateuch, to his majesty, Geo. III. by the hands of Robert Bowyer, Esq. His majesty was pleased graciously to accept of them, and to direct that his thanks should be given to the society. During this year also a plan was laid for translating the scriptures into various other eastern languages.

In February, 1804, these worthy laborers had the happiness of devolving a portion of their work upon two native teachers, and ordained Kristno and Petumber Shingo to the work of the ministry, with prayer and the imposition of hands. In the course of the year, fourteen more natives were baptised.

About four years previously, Mr. Ward being, on a visit at Calcutta, went with Kristno to a village called Ramkreeshnopore, on the other side of the river, opposite Calcutta. Here they left a number of small tracts, and a New Testament. Till now the effects were unknown. Kristno, on revisiting the village, meets with a byraggee, who tells him that the books have been read, and that several persons are convinced by them.

In November and December twenty-one persons were baptised, seven of whom came from Kristnopore, and were the fruits of the New Testament and tracts which were left at that village. One of them, named Kristnoo Dass, referring to Mr. Ward's having declared that 'it was for the use of the whole village, and that he who could read the best should keep it, and read it to all who wished to hear it,' said, 'he had got it, and that the reading of it had changed his ideas, and made him leave off idolatry, and put his trust in Christ.' The Testament was produced, and was nearly worn out by reading. Ten out of the twenty-one were baptised on November 3d. 'A solemn seriousness,' says Mr. Biss, 'pervaded the company. Some who seemed to know nothing of the power of religion, nevertheless shed tears.' At the Lord's supper there was great joy through the whole church, singing, and making melody in our hearts to the Lord.'

In the autumn of this year, captain Wickes being in London, the committee sent by him 1000 guineas, which had been collected in England, Scotland, and Ireland, towards the translation of the Scriptures into the eastern languages. On the captain's arrival in America, he expressed a wish in the public papers, that the friends of religion in his country would add something to it. The result was, that by the generous exertions of the different denominations, the original sum was considerably more than doubled, and sent in dollars to Serampore.

We have been following this band of brethren to the period of their cause taking that deep and well grounded root in India, from which it will not quickly be removed. But their steps were not everywhere encouraged. Both at home and in India, British authority and influence were occasionally arrayed against them. When, on the 23d of August, Messrs. Chater and Robinson
arrived, a demur was made as to their b
mitted to proceed to Serampore. Next
Carey was told by the magistrates that
a message for him, 'that as governmen
interfere with the prejudices of the n
was the governor-general's request t
Carey and his colleagues would not.'
plained by the magistrates, this request
to be a kind of order. 'They were not t
to the natives, nor suffer the native co
preach; they were not to distribute
tracts, nor suffer the people to distribu
they were not to send forth converted
nor take any steps, by conversation or o
for persuading the natives to embrac
tianity. Mr. Carey enquired whether
any written communication with the g
general; and being answered in the
took leave. This, however, it was af
said was not meant 'to prohibit Mr.
his brethren from preaching at Serampo
their own house at Calcutta; only they
preach at the loll bazaar. Nor was it int
prevent their circulating the scriptu
merely the tracts abusing the Hindoo
or to forbid the native Christians conver
their countrymen on Christianity, only th
not go out under the sanction of the
aries.'

In a conversation that took place betw
magistrates and a friend of the missiona
acknowledged themselves 'well satisfi
their character and deportment.' Messrs
and Robinson, however, were comman
return to Europe.

A tract, about this time, was transla
sent to England, in which the missiona
represented as calling the natives 'bar
and their shasters 'barbarian shasters,'
the original they had only intreated them
reject the bible as being the shaster of
barians, or 'M'leeches,' a name by whi
designate all who are not of the caste.
this a pamphlet appeared by Mr. T
and was followed by several more, wr
major Scott Waring, and others: some
espousing the cause of idolatry, and
them filled with unfounded statements, a
fectual endeavours to trace the Vellore
to the attempts at christianising the
The charges produced in these pamphl
answered by the friends of the missio
long after, a tract which had been pri
Bengalee, and which in that language co
nothing offensive, was put into the han
native to be translated into Persic. The
tion being finished, it was, through the p
of business, inadvertently printed off wit
ing first inspected by the missionaries;
translator having introduced various str
thets, calling Mahomet a tyrant, &c.
was alleged would irritate his followers,
tish authorities took it up in a serious
Mr. Carey being sent for, readily ackn
the impropriety of the epithets, and pro
enquire into the affair. Had the object
party been merely to prevent the dis
of the public tranquillity, things would
sued here. But proceedings were

which threatened ruin to the mission. In consequence, however, of an explanation, and a respectful memorial presented to the governor-general, the most serious part of the proceedings was revoked; and when two of the missionaries waited on his lordship to thank him for his candour in regard to their memorial, he replied, that nothing more was necessary than a mere examination of the subject, on which every thing appeared in a clear and favorable light. The missionaries however, were required, in future, not to print any tracts without first submitting them to the inspection of government.

In 1807 new rules were formed suited to the present state of the mission, every station being independent of the other, but all united as a general body. A considerable advance was made in ten of the translations: two new founts of type completed, viz. the Orissa and the Mahratta, and two others begun, viz. the Burmah and Chinese; a new and improved fount of Nagree also begun. With respect to printing, an impression of 1500 copies of the fourth volume of the Bengalee Old Testament, containing all the prophets, was completed; the third volume, comprising the historical books, being in the press; an edition of 10,000 copies of Luke, the Acts, and the epistle to the Romans was completed; the New Testament in the Sungscrit and Orissa considerably advanced; and the Hindostanee, Mahratta, and Guzuratee, put to press.

January 28, 1808, Serampore was taken by the English, but without making any difference in the situation of the missionaries. Mr. F. Carey, having studied medicine at Calcutta, introduced the vaccine inoculation at Rangoon. After having inoculated about fifty in the city with success, he was sent for by the governor to perform the operation on his children. This circumstance proved favorable to their settling as missionaries.

During this year the Danish clergyman at Serampore being dead, a question was moved among the inhabitants who should succeed him? The majority expressed their wish, that the missionaries might be permitted to do so. A petition was accordingly presented to the governor-general for the purpose, which being granted, the parish church has from that time, about September, been occupied by some of the Baptist brethren. They accept of no pecuniary reward for their services.

Towards the latter end of September there was a second examination of the lads engaged in the study of the Chinese language, held at Serampore; at which were present the vice-president of the Asiatic Society, with several other European gentlemen, who expressed their satisfaction in very strong terms. The missionaries now occupy the ten following stations, viz.

Bootan,	Missionary, Robinson.
Dinagepore, ...	Fernandez.
Saddamahl, ...	Wm. Carey.
Goamalty, ...	Mardon.
Miniary, ...	Moore.
Cutwa, ...	Chamberlain.
Jessore, ...	Carapeit Chater.
Serampore, ...	Carey, &c.
Calcutta, ...	Carey, &c.
Rangoon, ...	Chater and F. Carey.

In the month of March, 1809, they finished the Orissa New Testament. Towards the close of this year an improved paper manufacture was established in Serampore. The Benevolent Institution had increased to nearly ninety children, and a humane medical gentleman prescribed and furnished medicines for it and the family gratis. Access was allowed, and the gospel freely preached amongst the soldiers and their wives in the fort. In all the stations 106 were baptized during the year.

From the commencement of the following year, the missionaries speak of themselves no longer as a single mission, but as divided into five missions, according to the different languages of the country, and which they designate, the United Missions in India. These are the Bengal, the Burman, the Orissa, the Bootan, and the Hindoost'han. The Bengal contains five stations, the Hindoost'han two, and the rest one each.

In March the New Testament in the Hindee and Mahratta languages, the Pentateuch in Sungscrit, and the Prophetic books in Orissa, were finished at press; and considerable numbers of them were sent and distributed in the respective countries, from whence they afterwards received intelligence of their being read and understood.

In April the plan suggested by Dr. Bell and improved by Mr. Lancaster was introduced by Mr. Marshman into the school at Calcutta, by which the number of children could be greatly increased, and the expense contracted. Ground was purchased, and a new school-house erected, near the chapel, ninety feet by seventy, which would contain 800 children. Among the children in this school was a Malay boy, bought by Captain W. out of the hands of persons who were fattening him for sale to the Batta cannibals!

On the 11th of March, 1812, occurred a memorable calamity for the mission, the spacious printing-office at Serampore was consumed by fire, with all the types, many valuable MSS. and a large quantity of paper; the whole amounting to a loss of nearly £10,000. The missionaries, though much affected, were not greatly disheartened, nor in any degree induced to relax their efforts. New founts of type, in all the eastern languages, were cast, as soon as possible, from the melted metal recovered from the ruins; and the printing of the Scriptures was resumed, as fast as they could be prepared.

On the 19th of February the following year, the Tamul New Testament was finished at the press, and on the 20th was laid before the Calcutta Auxiliary Bible Society, at their anniversary. This edition, consisting of 5000 copies, was begun in April 1812, and completed in rather more than ten months.

The progress of the translations, during this year, cannot be better described than in an extract from a letter of Dr. Carey, dated December 14.—'We are, at this time, engaged in translating the Bible into twenty-one languages, including the Bengalee, which is finished. This week, we obtained a person to assist in the translation of the Scriptures into the Kassai language. About a fortnight ago we obtained help for the Sindh and Wuch. I believe we have now all the languages in that part, except that of Kutch, which, I hope, will soon be brought within our reach. We have not yet been able to secure the languages of Nepala, Bootan, Munipoora, and Siam, and about five or six tribes of mountaineers: besides these, I am not acquainted with any language on the continent of India, into which the word of God is not under translation.'

At the public disputation of the students of the college of Fort William, held before Lord Minto as visitor of the college, on September 20th, his lordship, after enumerating their recent labors, concludes thus: 'I profess a very sincere pleasure in bringing the literary merits of Mr. Marshman and the other Reverend Members of the Serampore Mission to the notice of the public, and in bearing my testimony to the great and extraordinary labors which constancy and energy in their numerous and various occupations have enabled this modest and respectable community to accomplish. I am not less gratified by the opportunity which their literary achievements afford, of expressing my regard for the exemplary worth of their lives, and the beneficent principle which distinguishes and presides in the various useful establishments which they have formed, and which are conducted by themselves.' The stations occupied by the mission in 1814 had increased to twenty-four.

In 1815 the society had to sustain one of its greatest losses at home in the death of their secretary, the Rev. Andrew Fuller, who expired at Kettering, after a short illness, on May 7th. He had sustained this arduous and important office ever since the commencement of the society in 1792; and at length fell a sacrifice to its accumulated cares and labors. At the next meeting of the committee, Dr. Ryland, of Bristol, was requested to undertake the office, *pro tempore*; and, at the annual meeting, held at Northampton, in October, this appointment was confirmed, and Mr. Hinton, of Oxford, associated with the Doctor, as joint-secretary. November 27th the mission premises were visited by the Right Hon. Earl Moira, the bishop of Calcutta, and other distinguished personages, who expressed their high gratification with what they saw. On December 15th the settlement was restored to the Danish government.

January, 1818, say the missionaries, 'In the Bengalee we have commenced a new edition, of 5000 copies, of the whole Scriptures, in a new and much-reduced type, reduced by brother Lawson, when he resided at Serampore. By means of this alteration we shall be able to comprise the whole Bible in one large octavo volume of 850 pages; which has hitherto occupied five volumes, of 800 pages each. The brethren intend to print 5000 additional Testaments, forming a thin volume, of about 180 pages. In the Sungscrit, the Latin of the east, and intelligible to almost all the learned men throughout Hindoostan, the Historical Books have been completed, and the printing advanced to the middle of Jeremiah. We therefore expect to complete this volume within the next three months, and shall then have printed the whole of the Scriptures in that language. The Hindee Bible is still further advanced; and we fully expect that within a month the last part will be ready for distribution. We shall then have printed the first edition of the whole Scriptures, with a second edition of the New Testament. In the Mahratta the historical books have been printed off, since the last Memoir, and the Hagiographa advanced to the middle of Proverbs. In the Sikh, the Pentateuch is just completed, and the historical books begun. In the Chinese we have just completed the Pentateuch, and are now proceeding with a second edition of the New Testament. In the Telinga the New Testament is printed as far as the Thessalonians; and we hope to have finished the volume ere this reaches you. In the Pushtoo Testament the printing is advanced as far as the first of Peter; and in the Assam and Wuch, to the Romans: while, in the Bruj Bhassa, although a delay has arisen in consequence of the distance of brother Chamberlain's station, who was superintending the version, we are preparing to proceed with the version as before. In the Kurnata we have finished Mark, and are proceeding with Luke: while in the Kunkuna, the Mooltanee, the Sindhee, the Kashmere, the Bikaneer, the Nepal, the Ooduypore, the Marwar, the Juypore, and the Khassee, not much progress in printing has been made since the last Report. As soon, however, as the Hindee and Sungscrit versions are completed, it is intended to proceed with them. These translations were never advancing more rapidly than at present. The office now furnishes our venerable editor, Dr. Carey (independently of the Chinese proofs it forwards to Dr. Marshman) with twelve proofs per week, on an average. To which may be added, that opportunities of distributing the Scriptures, when printed, are becoming more extensive.'

Copies of the New Testament, in various languages, as printed and published at Serampore, were presented by Mr. Ward at the Annual Meeting of the British and Foreign Bible Society, in 1820; and two years after, the Chinese Bible complete, the result of sixteen years labor on the part of Dr. Marshman, was presented on a similar occasion, by his eldest son, then in England. At that time, 1822, the New Testament had been printed and published in twenty-one different languages, and the work was proceeding in ten others. Four versions, after having been carried to a certain point, had been resigned to other individuals, whose local residence afforded greater facilities for completing them; and ten besides were suspended, principally because the requisite pecuniary means were wanting.

In 1819 a new station was formed in the island of Ceylon, at a place called Hangwell, about fourteen miles from Colombo. Mr. Siers removed hither, and a small church was subsequently formed under his direction. The translation of the whole Bible into Cingalese, by the united efforts of Messrs. Chater, Armour, and Clough, was completed about the end of 1822.

No part of the missionary undertakings of this society has succeeded more satisfactorily than the Jamaica mission. In 1819 two gentlemen left England for Kingston and Spanish town; a spacious chapel has been built at the former place.

year 1822 the number of members in
h exceeded 2,000: Mr. Knibb arrived
to take charge of a free school, estab-
d maintained by the congregation; and
on to commence a new station in a dis-
of the island. A station has been also
the north-west part of the island, on an
the parish of St. James's; the owners
had long been favorable to the instruc-
eir negroes.

sequence of facilities afforded by some
ntlemen, in the habit of trading to that
the committee were induced, in 1822,
eir attention further westward still, and
ut Mr. James Bourne as a missionary to
f Honduras, South America.

ne, the business of the society having
far more extensive than formerly, some
s were made in the manner of con-
it. At the General Meeting held at
ge, October, 1819, it was resolved that
committee should be formed out of the
committee, who should meet monthly,
n, for the transaction of business; and
time the Annual Meeting of the society
held also in the Metropolis, in the
June. Mr. Hinton, of Oxford, in con-
of his other numerous and important
nts, had resigned the office of joint
in October, 1817, on which Mr. Dyer,
Reading, now of Battersea, was chosen
secretary to Dr. Ryland, and, in the
year, requested to devote himself ex-
to the service of the mission, as joint
. In 1820 premises were engaged for
y in London, and at length a suitable
chased, at No. 6, Fen Court, Fenchurch
here its still increasing business is now
n.

ive of the Chinese, the New Testament
hed and sent into circulation in twenty
guages of India. They are:

	Commenced.	Finished at press.
Bengalee, 6th ition in the press	1794	1801
Hindee, 2d edi- n in the press	1802	1811
Sungscrit, 2d ition in the press	1803	1810
Orissa, 2d edi- n in the press	1803	1811
Mahratta, 2d ion in the press	1804	1811
elinga . . .	1805	1818
kh	1807	1815
ujuratee . .	1807	1820
unkuna .	1808	1819
urnata . . .	1808	1822
ushtoo or Aff-	1811	1819
ssamee . . .	1811	1819
utch or Mul-	1812	1819
ikaneer . . .	1813	1820
ashmeer . .	1810	1820
hugulkhund .	1814	1821
Marwar . .	1814	1821
The Nepalee . . .	1812	1821
The Harotee . . .	1815	1822
20. The Kanoj*a* . . .	1815	1822
The Chinese, 2d edition of the gospels printed	1806	1817

From this view of the translations, and of the time whem they were respectively begun and finished at press, it will be evident that none of them have been brought hastily through the press. Seven years have formed the shortest period which has been occupied, even by those in which the terminations were the nearest akin to those in the neighbouring dialects: we have before us the most honorable and competent eastern testimony to the corrrectness of these versions.

The following list exhibits ten other versions now or recently in the Serampore press, with the period of their commencement, and the state of their progress.

	Begun.	Printed to.
The J*u*mboo	1814	Phil. iii. 9
The M*u*nipoor . . .	1814	2 Cor. xiii. 4
The M*u*g*u*dh	1814	Rom. xiii. 4
The Khasee	1814	Acts xix. 29
The Oojjuyunee. . . .	1815	Phil. i. 10
The Bruj	1815	2 Cor. ii. 9
The K*u*maoun . . .	1815	Luke x. 23
The Bh*u*tneer	1816	Rom. xiv. 13
The Sree-nugar, or Gurwal	1816	Luke xi. 21
The Palpa	1817	Matt. xxvii. 8

To these we may add the Kythee edition, which is the Hindee in the current Naguree character, chiefly used by the mercantile and trading classes, and in which at the earnest request of the late Mr. Chamberlain, they prepared a fount of types for the sake of printing the New Testament. We are able further to submit to the reader a brief view of what have been done by this society relative to the Old Testament, as well as the New.

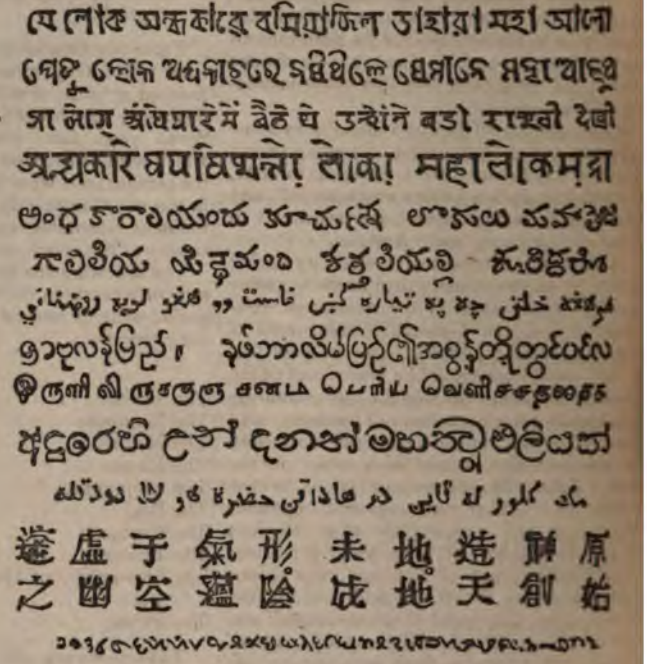
State of the Versions of the Old Testament.

The Bengalee, second edition advanced to 1 Sam. xx.
The Sungscrit, second edition advanced to Exod. xxxi.
The Orissa, first edition finished at press in 1819.
The Mahratta, first edition printed off in 1820.
The Chinese. finished at press April 1822.
The Sikh, Pentateuch, and Historical Books, printed; Prophetic printed to Jer. xiii.
The Assamee, Pentateuch finished, Historical Books begun.
The Pushtoo or Affghan, Pentateuch advanced to Deut. xxx.
The Kashmeer, Pentateuch advanced to Gen. xxxvi.
The Telinga, Pentateuch printed; and the version resigned to the Madras Bible Society.

The Old Testament now printed off in Chinese, forms the sixth version completed here of the whole Scriptures in the different Indian languages. This was finished at press in April this year; after sixteen years of unremitting labor.

We close with a fac-simile of a printed passage, in thirteen of those eastern languages, in w the Scriptures have been published in the whole, or in part, by this Society.

TEXT.—'The people which sat in darkness saw great light,' &c.—MATT. iv. 16.



No. 1. The Bengalee.
2. The Orissa.
3. The Hindoostanee.
4. The Sungskrit.
5. The Telinga.
6. The Kurnata.
7. The Affghan.
8. The Burman.
9. The Tamul.
10. The Singalese.
11. The Malay.
12. The Chinese.
13. The Multanee.

BAPTISTE (John Monoyer), an artist, born in Lisle in 1635, who received his education at Antwerp, and in his first years was intended for a painter of history; but his genius more strongly inclining him to the representation of flowers he applied his talents to those subjects, and became in that style one of the greatest masters. The disposition of his objects is elegant and beautiful; and his compositions are easily known in that respect. The duke of Montague employed him in conjunction with La Fosse and Rousseau, to embellish his house, now the British Museum; where are some of the finest performances of Baptist. A celebrated work of his is a looking-glass in the royal palace at Kensington, which he decorated with a garland of flowers for Queen Mary II. who sat by him during the greatest part of the time he was painting it. Baptist died in 1699, leaving a son, Anthony, who painted flowers in his father's style.

BAPTISTE (John Gaspars), born at Antwerp, was the disciple of Boschaert. During the civil war he came to England, and entered into the service of General Lambert; but after the restoration was engaged by Sir Peter Lely to paint the postures and draperies of his portraits; and he has been called Lely's Baptist. Kneller also, and Riley, employed him for the same purpose. In the hall of St. Bartholemew's hospital is a portrait of King Charles II. painted by this artist, who died in 1691

BAPTISTIN (John Baptiste Stuk), an Itali musician, was a native of Florence. He was good composer, but is chiefly famed as hav first brought the violincello into fashion France. He died about 1740.

BAR', *v.* & *n.*, } From the Ang.-Sax. bairg
BAR'FUL. } beorgan, birgan, byrgan, lit
rally to prevent, to keep out, or obstruct, guard, to secure, to fortify, to prohibit. Chauc once uses it in a metaphorical sense, 'cover with precious cloth and rich, *barred* (that is strip and crossed in the form of bars) and plated gold and silver.'—*The Persones Tale.* But w meet with it in other parts of his writings, employed according to the common acceptation.

> He rode but homely in a medlee cote,
> Girt with a seint of silke, with *barres* small.
> Chauc

> He was short shuldered, brode, a thikke gnarre,
> Ther 'nas no dore that he 'nolde heve of *barre*,
> Or breke it at a renning with his hede.

> He breake the *barres*, and through the timber p
> So large a hole, wherby they might discerne
> The house, the court, the secret chambers eke
> Of Priamus, and auncient kings of Troy. Sur

> Deep in the bottom of an huge great rock
> The dungeon was, in which her bound he left
> That neither yron *barres*, nor brasen locks,
> Did need to guard from force or secret theft
> Spen

he set bounds between their love and me?
eir mother, who shall *bar* them from me?
Shakspeare.

My duty cannot suffer
ey in all your daughter's hard commands;
gh their injunction be to *bar* my doors,
et this tyrannous night take hold upon you.
Id.

When law can do no right,
it be lawful, that law *bar* no wrong. *Id.*

. I'll do my best
your lady; yet, a *barrefull* strife,
I woo, myself would be his wife.
Id. Twelfth Night.

like pris'ners, *barr'd* with doors and chaines,
et no care perpetual care restraines.
Beaumont. Of True Liberty.

d, thou know'st it, to exclude
al substance with corporeal *bar*. *Milton.*

hese *bars* enclose that wider den,
those wild creatures called men. *Marvell.*

ope of Italy, not only lost,
from ev'ry shore, and *barr'd* from ev'ry coast.
Dryden.

you *bar* the window shutters of your lady's
ber at nights, leave open the sashes, to let in
Swift.

is a greater pedant than a mere man of the
Bar him the playhouses, and you strike him
Addison.

With emulation fir'd,
strain to lead the field, top the *barr'd* gate,
e deep ditch exulting bound, and brush
orny-twining hedge. *Somerville. The Chace.*

The folded gates would *bar* my progress now,
But that the lord of this enclos'd demesne,
Communicative of the good he owns,
Admits me to a share; the guiltless eye
Commits no wrong, nor wastes what it enjoys.
Cowper's Task.

Bar, in law, is a peremptory exception against a demand or plea brought by the defendant in an action, that destroys the action of the plaintiff for ever. It is divided into a bar to common intent, and a bar special; a bar to common intent is an ordinary or general bar, that disables the declaration or plea of the plaintiff; a bar special, is that which is more than ordinary, and falls out in the case in hand, upon some special circumstance of the fact.

Bar, in heraldry, one of the honorable ordinaries, consisting of two horizontal lines drawn across the escutcheon, as in fig. 1. The *bar* differs from the *fesse* in three particulars, namely, that it occupies a fifth part of the field instead of a third; it is not limited to any part of the escutcheon, and is never borne single. It has two diminutives, namely, the *closet* (fig. 2), which is half the bar, and the *barrule* (fig. 3), which is half the closet. Of the closet there may be five in one field; but the barrulet can be borne only in couples. *Bars-gemelles* are so called when they stand in couples, as in fig. 4. 'The field is *argent*, a fesse between two bars, gemelles *gules*, by the name of Badlemere.'

Fig. 1.

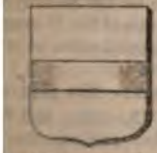


Fig. 2.

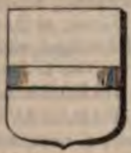


Fig. 3.

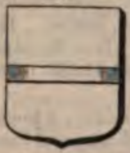
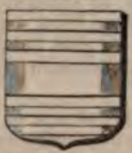


Fig. 4.



in African traffic, is used for a denomi-
f price: payment being formerly made
egroes almost wholly in iron bars.

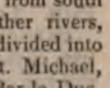
in courts of justice, is an enclosure
ith a strong partition of timber, where
cil are placed to plead causes. It is
lied to the benches where the lawyers
ates are seated, because anciently, there
r to separate the pleaders from the at-
nd others. Hence our lawyers, who are
the bar, or licensed to plead, are termed
, an appellation equivalent to licentiate
countries.

f gold or silver, is a lump or wedge from
elted down into a sort of mould, and
ought.

of a horse, are the upper part of the
tween the tusks and grinders, which
teeth, and to which the bit is applied,
friction the horse is governed.

in music, are strokes drawn perpendi-
ross the lines of a piece of music; used
te the beating or measure of musical
he use of bars in music is a modern in-
They cannot be traced higher than the
, and seem not to be in general use till
middle of the seventeenth century. It
y to imagine how music in many parts
composed without bars, or how the

maxima, or large, equal to eight semibreves, could be divided into bars of one or two semibreves in each. See Battuta, and Time-table. A double bar implies the end of a strain. When double bars are dotted on both sides, thus, the dots imply a repetition of each strain; but if dotted only on one side, that strain only which precedes or follows the dots, is to be repeated.



Bar, in geography, (Gael. a hill or brae), the name of several places in different parts of Europe: such as,

Bar, a ci-devant duchy of France, bounded on the east by Lorraine, on the north by Luxembourg, on the west by Champagne, on the south by part of the same country and by Franche Comté; it is crossed by the Meuse from south to north, and watered by several other rivers, which render it very fertile. It was divided into four bailiages, viz. Bassigni, Bar, St. Michael, and Clermont. The chief towns are Bar-le-Duc, Clermont, St. Michael, Longwy, Pont-a-Mousson, and Stenay. In 1736 it was given to Stanislaus, then king of Poland.

Bar, a city of Poland, in Podolia, seated on the river Kiov, and strongly fortified; forty-eight miles north-west of Braclaw, and sixty-five north-east of Kaminieck.

Bar, a town in the province of Bahar, in the district of the same name, thirty-five miles E. S. E. of Patna. Long. 86° 46′ E., lat. 25° 28′ N.

Bar, a hill of Scotland, in Renfrewshire, in the parish of Kilbarchan, on the top of which are the remains of an old encampment, consisting of a semicircular parapet of loose stones towards the south, and defended on the north by perpendicular basaltic rocks. Tradition says it was an encampment of the celebrated Sir William Wallace; and the people show a pinnacle of rock where they say he sat, while he enticed the English forces into a bog at the bottom of it, where they perished. But Mr. Maxwell, the minister of the parish, concludes it to be Danish from its form, and from the silence of historians respecting this anecdote of the Scots patriot. Mr. Maxwell also mentions it as a singular fact in natural history, by no means consonant to the prevailing theories, that these perpendicular basaltes are incumbent upon coal, formerly wrought to a great extent.

Bar, or **Barr**, a small but thriving town of France, in the department of the Lower Rhine, sixteen miles south-west from Strasburg. It has a population of 4100 souls.

Bar-le-Mont, a town of France, in the ci-devant French Netherlands, now in the department of the North; fifteen miles south of Mons, situated on the Sambre.

Bar sur Aube, an ancient town of France, in the department of Aube, and ci-devant province of Champagne, twenty-six miles east of Troyes, famous for its excellent wines. The manufactures are soap, linen, serge, and leather. Here are also some good iron-works. It is the capital of an arrondissement, containing 44,000 inhabitants.

Bar sur Ornain, or **Bar-le-Duc**, a town of France, in the department of Meuse, and the ci-devant capital of the duchy of Bar. It is seated on the declivity of a hill, and divided into the higher and lower town; the lower town is watered by the rivulet Ornain, which abounds with excellent trout. The population nearly 10,000. Here are manufactures of calicoes, woollen stuffs, stockings, hats, and leather; also a good trade in grain, wood, brandy, wine, and hemp. Forty-two miles west of Nancy, and 133 east of Paris. Long. 52° 15′ E., lat. 48° 47′ N.

Bar-sur-Seine, a town of France, in Burgundy, on the Seine; formerly the capital of a county of the same name, now of an arrondissement in the department of the Aube. In it are 460 houses, and 2270 inhabitants, with manufactures of knives, leather, and woollen caps, and a trade in wine, grain, and paper. Eighteen miles south-east of Troyes, and 110 south-east of Paris. Long. 4° 27′ E., lat. 48° 7′ N.

Bars-gemel, or bars-gemelles, are diminutives of the bar, and are placed in pairs, or two and two on a shield. They derive their name from the Latin gemelli, twins.

BARA, a festival celebrated with much magnificence at Messina, and representing the assumption of the Virgin. The bara, though used as the general denomination of this festival, signifies more particularly a vast machine fifty feet high, at the top of which a young girl of fourteen, representing the Virgin, stands upon
of an image of Jesus Christ. Round
vertically, in a circle, twelve little
which represent the seraphim; below
another circle, which turns horizont
twelve more representing the cherubin
these a sun turns vertically, with a chi
extremity of each of the four princip
his circle, who ascend and descend wit
tation, yet still stand upright. Below t
the lowest circle, about seven feet
ground, in which twelve boys turn ho
without interruption: these are intende
twelve apostles, who are supposed to
the tomb of the Virgin at the moment
ascends into heaven. This description
complication of superstitious whirlig
nearly turn the stomachs of our delicate
but think of the poor little cherubim,
and apostles, who are twirled about in
cession! 'For,' says M. Houel, in his
through Sicily, 'some of them fall aslee
of them vomit, and several do still wo
these unseemly effusions are no drawb
the edification of the people; and n
more common than to see fathers and
soliciting with ardor for their boys
the pious distinction of puking at
This machine is not drawn by asses
but by a multitude of robust monks!

Bara, in ancient geography, 1. a sm
in the Adriatic, opposite to Brundus
Pharos of Mela: 2. A Frith, or arm of
Britannia, supposed to be the Murray

Bara, or **Barray**, one of the Westen
of Scotland, eight computed miles in le
from two to four in breadth.

BARABAIAN Desert. See **Bara**

BARABBAS, from בן, a son, and
ther, a notorious robber and murdere
Pilate, wishing to save Jesus, offered f
tion to the Jews; but they, instigated
rulers, saved the murderer, and mur
Saviour of mankind.

BARABINZIANS, a tribe of Tar
live on both sides the river Irtisch. The
derive their name from the Barabai
whose lakes supply them abundantly
on which, and their cattle, they chiefly

BARABRAS, a people of Lower N
tiguous to Egypt. They are a distinct
their neighbours, and of unknown origi

BARACHAN, a creek on the wester
Scotland, on the Ross side of the Soun
where vessels of considerable burden
chor in safety.

BARACOA, a sea-port on the north-
of the island of Cuba, fifty miles north-
Jago.

BARADÆUS, **Jacob**, or **Jacob Za**
monk of the sixth century. He was a
birth, and a disciple of Eutyches and D
He maintained that there is but one
Christ; and his doctrines spread so
Asia and Africa that the Eutychians
lowed up by that of the Jacobites, w
comprehended all the Monophysites of
His party made him bishop of Ed
died in 588.

K, ברק, i. e. lightning; the son of of Kedesh Napthali, one of the deli- Israel from the oppression of the Ca- See Judges iv.

KAN, or PARKAN, a town of Hungary, fortified, in the farther circle of the where the Turks were defeated, and recovered by the Imperialists, who took n in 1684. It is opposite to Gran, of s reckoned a part.

LIPTON, among logicians, a term de- first indirect mode of the first figure ism. A syllogism in baralipton, is two first propositions are general, and particular, the middle term being the the first proposition, and the predi- he second. The following is of this

very evil ought to be feared;
very violent passion is an evil;
herefore something that ought to be
feared is a violent passion.

LLOTS, in church history, a sect of t Bologna, in Italy, who had all things on, even their wives and children! ility in complying with all manner of ry made them get the name of obe- r compliers.

N, a river rising in the Hindoo Kho s, and flowing through the north-east of

NCA DE MALAMBO, a town of Terra America, with a bishop's see and a en. It is a place of great trade, seated river Magdalena, seventy-five miles Carthagena.

NGI, officers among the Greeks of the pire, who kept the keys of the city ere the emperor resided. Codinus stood guard at the door of the em- d-chamber and dining-room. Codinus palata observe, that the name is English, om bar, to shut; and that the barangi glishmen by country; Anglo-Danes, g driven out of England, were received rvice of the emperor of Constantinople, e guards or protectors of his person. they are called in Latin (Cujaccius), es; by others, securigeri, as being th securis, a battle-axe. Codinus adds, still spoke the English tongue. Anna says, the barangi came from the island y which is doubtless meant our island. tas makes them Germans; a mistake made at that distance, considering the the Anglo-Saxons bore to Germany. re barangi as early as the emperor Mi- phlagonius, in 1035, as appears from ; but they were then only common not a life-guard. Their commander was ολοθος, importing a person who always the emperor.

NTA, a West Indian balsam.

NYAT, a county of Lower Hungary, by the Danube, Sclavonia, and the of Tolna and Schumeg. It abounds in it, wine, cattle, and gama. Its capital irchen, and it has a population of 140,000

BARANZANO (Redemptus), a Barnabite monk, born in Piedmont in 1590. He became professor of philosophy and mathematics at Anneci, and was highly esteemed by lord Bacon, who corresponded with him. He died at Montargis in 1622. He wrote, 1, Uranoscopia, seu Universa Doctrina de Cœlo, fol. 1617; 2. Campus Philosophicus, 8vo. 1620; 3. De Novis Opinionibus Physicis, 8vo. 1617.

BARA-PICKLET, bread made of fine flour kneaded with barm, which makes it very light aud spongy: bara being the Welch for bread.

BARATHIER (Barthelemy), an Italian lawyer of the fifteenth century. He was born at Placentia, and became professor at Pavia and Ferrara. He published a New Digest of the Feudal Law, at Paris, in 1611.

BARATHRA, a name of the Serbonian bog.

BARATHRO, a glutton. See BARATHRUM.

BARATHRON, solemn games held at Thesprotia.

BARATHRUM, βαραθρον, in antiquity, a deep dark pit at Athens, into which condemned persons were cast headlong. It had sharp spikes at the top that no man might escape out; and others at the bottom, to pierce and torment such as were cast in. Its depth and capaciousness made it to be applied proverbially to a covetous person, a glutton, called barathro by the Romans, and a common prostitute.

BARATHRUM, in physiology, a baleful cavern, inaccessible on account of its fœtid, or poisonous fumes; styled by others fossa charonia.

BARATIER (Philip), a most extraordinary instance of early and rapid exertion of mental faculties. This surprising genius was the son of Francis Baratier, minister of the French church at Schwabach, near Nuremberg, where he was born January 10, 1721. The French was his mother-tongue, and High Dutch the language of the place; but his father talking Latin to him, that language became as familiar to him as the rest: so that without knowing the rules of grammar, he, at four years of age, talked French to his mother, Latin to his father, and High Dutch to the maid, or neighbouring children; and all this without mixing or confounding the respective languages. About the middle of his fifth year he acquired Greek in like manner; so that in fifteen months he perfectly understood all the Greek books in the Old and New Testament, which he readily translated into Latin. When he was five years and eight months old, he entered upon Hebrew; and in three years was so expert in the Hebrew text, that from a bible without points, he could give the sense of the original in Latin or French; or translate extempore the Latin or French versions into Hebrew, almost word for word; and had all the Hebrew psalms by heart. He composed, at this time, a dictionary of rare and difficult Hebrew words, with critical remarks and philosophical observations, in about 400 pages in 4to; and, about his tenth year, amused himself for twelve months with the rabbinical writers. With these he intermixed a knowledge of the Chaldaic, Syriac, and Arabic; and acquired a taste for divinity and ecclesiastical antiquity, by studying the Greek fathers and councils of the first four ages of the church. In the midst of these occupations, a pair of globes coming into his possession, he could, in ten days time, resolve all the problems on them; and in about three months (in January, 1735), devised his project for the discovery of the longitude, which he communicated to the Royal Society at London and the Royal Academy of Sciences at Berlin. In June, 1731, he was matriculated in the university of Altorf; and at the close of 1732, he was presented by his father at the meeting of the reformed churches of the circle of Franconia; who, astonished at his wonderful talents, admitted him to assist in the deliberations of the synod; and to preserve the memory of so singular an event, it was ordered to be registered in their acts. In 1734 the margrave of Brandenburgh Anspach granted this young scholar the use of whatever books he wanted from the Anspach library, together with a pension of fifty florins, which he enjoyed three years; and his father receiving a call to the French church at Stettin, in Pomerania, young Baratier was, on the journey, admitted M. A. with universal applause at the university of Halle; at Berlin he was honored with several conversations with the king of Prussia, and was received into the royal academy. Towards the close of his life he acquired a taste for medals, inscriptions, and antiquities; metaphysical enquiries, and experimental philosophy, intervening occasionally between these studies. He wrote several essays and dissertations; made astronomical remarks and laborious calculations; and took great pains towards a history of the heresies of the anti-trinitarians, and of the thirty years' war in Germany. His last publication, which appeared in 1740, was on the succession of the bishops of Rome. The final work he was engaged in, and for which he had collected many materials, was Enquiries concerning the Egyptian Antiquities. But the substance of this blazing meteor was now nearly exhausted; he was always weak and sickly, and died October 5, 1740, aged nineteen years, eight months, and sixteen days. He published eleven different pieces, and left twenty-six MSS. on various subjects, the contents of which may be seen in his life, written by M. Formey, professor of philosophy at Berlin.

BARATOR, or **Barretor**, in law. Lambert derives the word from the Latin balatro, a vile knave; but the proper derivation is from the French barrateur, i. e. a deceiver; and this agrees with the description of a common barretor in lord Coke's report, viz. that he is a common mover and maintainer of suits in disturbance of the peace, and in taking and detaining the possession of houses and lands, or goods, by false inventions, &c. And, therefore, it was adjudged that the indictment against him ought to be in these words, viz. that he is communis malefactor, calumniator et seminator litium et discordiarum inter vicinos suos, et pacis regis perturbator, &c. It is said that a common barretor is the most dangerous oppressor in the law, for he oppresseth the innocent by color of law, which was made to protect them from oppression.

Baratry, or **Barratry**, in a shipmaster, is his cheating the owners. If goods delivered on ship-board are embezzled, all the mariners ought by the maritime law, to contribute to the satisfaction of the party that lost his goods,
cause is to be tried in the admiralty. I
where a ship was insured against the
of the master, &c. and the jury found
ship was lost by the fraud and negligenc
master, the court agreed, that the fr
baratry, though not named in the covena
that negligence was not.

Baratry, or **Barretry**, from barat
fraud; in law, is the offence of frequently
up suits and quarrels between his majest
jects, either at law or otherwise. The
ment for this offence, in a common perso
fine and imprisonment: but if the offe
is too frequently the case, belongs to the
sion of the law, the barator who is thus
well as willing to do mischief, ought al
be disabled for practising for the future.
indeed, it is enacted by statute 12 Geo.
that if any one having been convicted of
perjury, subornation of perjury, or comm
retry, shall practice as an attorney, solic
agent in any suit, the court, upon co
shall examine it in a summary way;
proved, shall direct the offender to be tran
for seven years. Hereunto also may be
another offence of equal malignity and au
ness, that of suing another in the name
titious plaintiff, either one not in being
one who is ignorant of the suit. This of
committed in any of the king's superior
is left, as a high contempt, to be pun
their discretion: but in courts of a lower
where the crime is equally pernicious,
authority of the judges not equally exte
is directed by statute 8 Eliz. c. 2, to be p
by six months imprisonment, and treble
to the party injured.

Baratry is also used for bribery or
tion in a judge, giving a false sentence for

Baratry is also used, in middle age
for fraud or deceit in making of contract
or the like.

BARATZ, Turkish, letters-patent gra
the Turkish emperors to the Greek pa
bishops, &c. for the exercise of their ec
tical functions. This baratz gives the
full power and authority to establish and
the inferior clergy, and all other religio
sons; to grant licenses for marriages, a
out divorces; to collect the revenues be
to the churches; to receive the pious
bequeathed to them; in short, to enjoy
privileges and advantages belonging
high station: and all this (as it is expr
the baratz itself), 'according to the v
idle ceremonies of the Christians.'

BARB', *v.* & *n.* } Fr. *barbier*, Dut
Barb'ated, } Lat. *barba*. The ety
Barb'ed, } doubtful. It sig
Barb'er, *v.* & *n.* } *beard*; hence it ha
Barb'et. } to mean a cover
protection; as armour and trappings for
a hood or muffler for the head and lower
the face and shoulders. It has also be
tended in its application to the jags or
points of an arrow or hook. To barb, is
to shave, or to dress out the beard. Bar
tracted from Barbary, signifies a Barbary

uertio the duke strake the kyng on the
nder the defence of the hedpece, on the
cull or bassenet pece, whereunto the *bar-*
r and defence is charneld.

Hall. King Henry VIII. fol. 133.

this, and tell me how you fare,
our *barbe*, and shew your face bare,
our boke, rise up and let us dance,
done to May some observaunce.

Chaucer. Troilus and Creseide.

ner of arrows heades sayth Pollux, was
time. The one he calleth *ογκιος*, de-
hus, having two points or *barbes*, looking
the stele and the feathers, which surely
nglishe, a brode arrowe head or a swalowe

Roger Ascham. Toxophilus.

they were from the senate, and presents
to them, to wit, a chaine of gold weigh-
ds; certain golden cups of foure pounde
ave courser *barbed* and trapp'd, and an
rmour. *Holland. Livius.*

head, and tie the beard, and say it was
the penitent to be so *barbed* before his

Shakspeare.

'd war hath smooth'd his wrinkled front;
nstead of mounting *barbed* steeds,
soul of fearful adversaries,
mbly in a lady's chamber,
ious pleasing of a lute. *Id.*

es were naked, without any *barbs*; for
brought *barbs*, few regarded to put them

Hayward.

ing scythe-man, that doth *barb* the field,
wink-sure; in night all creatures sleep.

Marston. Malcontent.

No drizzling show'r,
tling storm of arrows, *barb'd* with fire.

Milton.

Thy boisterous looks
thy match for valour to assail,
the *barber's* razor best subdued. *Id.*

A warriour train
te a deluge pour'd upon the plain;
ed steeds they rode, in proud array,
the college of the bees in May.

Dryden's Fables.

he Spartan fear'd before he found
barb appear above the wound. *Pope.*

n brawl, coblers sing; but why must a
ever a politician, a musician, an anato-
, and a physician? *Talter*, No. 34.

ay so much stress on a plate and descrip-
y Plot, of a dart uncommonly *barbated.*

Warton.

a fine gentlemen several trades are re-
chiefly a *barber*. You have undoubtedly
Jewish champion, whose strength lay in
ne would think the English were for
isdom there; to appear wise nothing is
te here than for a man to borrow hair
ds of all his neighbours, and clap it like
s own.

Goldsmith. Citizen of the World.

t as above the surface of the flood,
tum rise, or urg'd by hunger leap,
with gentle twitch, the *barbed* hook.

Thomson.

ought from Barbary are commonly of a
size, and very dear, usually chosen from
Barbs, it is said, may die, but never grow
our and mettle of *barbs* never cease but
fe. *Farrier's Dictionary.*

They are ill-built,
Pin-buttock'd like your dainty *barbaries*,
And weak i' the pasterns.

Beaumont and Fletcher.

But why should you who still succeed,
Whether with graceful act you lead
The fiery *barb*, or with as graceful motion tread
In shining balls, where all agree
To give the highest praise to thee.

Verses to Lansdowne.

BARB is also used for the Barbary pigeon, called by Moore the columba numidica. This bird is but a small pigeon, and has a very short beak like a bullfinch, with a small water, and a naked circle of tuberose red flesh round the eyes; the iris of the eye is of a pearl color, and the broader and redder this circle round them is, the more the pigeon is valued; but this is always narrow while they are young, and does not arrive at its full breadth till they are four years old. Some of this species have a tuft of feathers behind their head, and others not. The red circle round their eyes grows pale and whitish if they become sick, but always recovers its redness as they grow well. Their proper color is black or dun. There are likewise pied ones; but they are of a mixed breed and not so valuable.

BARBA, in botany, a species of pubes, or down, with which the surface of some plants is covered. The term was invented by Linnæus, and by its application in the Species Plantarum, seems to signify a tuft or bunch of strong hairs terminating the leaves. The mesembryanthemum barbatum, a species of marygold, furnishes an example. The word is also often used in composition to form the trivial names of several plants.

BARBA ARON, in botany, a name given by some authors to the common great house-leek.

BARBA CAPRÆ, in botany. See SPIRÆA. Of this genus Mr. Tournefort allows only one species, the common barba capræ, or, as it is called by some, drymopogon.

BARBA JOVIS, in botany, a species of anthyllis

BARBA (Alvarez Alonzo), curate of St. Bernard de Potosi, in the seventeenth century. He was author of a curious book on metallurgy, published at Madrid in 1620, quarto, and again in 1730, abridged in French, 12mo.

BAR'BACAN, *n. s.* Fr. *barbacane*, Span. *barbacana.* A fortification placed before the walls of a town. A fortress at the end of a bridge. An opening in the wall through which the guns are levelled.

Within the *barbacan* a porter sate,
Day and night duly keeping watch and ward:
Nor wight nor word mote pass out of the gate,
But in good order, and with due regard.

Faerie Queene.

BARBACAN, OR BARBICAN. See CASTLE.

BARBADENSIS, in conchology, a species of voluta, inhabiting the American seas. The shell is an inch and a half long, tapering; color reddish, with very fine transverse striæ.

BARBADENSIS, in ornithology, a species of psittacus, the ash-fronted parrot of Latham. This bird is green; about the size of a pigeon, and inhabits Barbadoes.

BARBADILLO (Alphonsus Jerom de Salas), a Spanish dramatic writer, born at Madrid. He was author of several comedies, and of the Adventures of Don Diego de Noche, 1624, 8vo.

BARBADINO, a learned Portuguese. He wrote and published at Paris, in 1746, a book in his native language, On the present state of Literature in Portugal. This work was attacked with great severity by a Portuguese jesuit, and defended by Don Joseph de Maymo.

BARBADO, a district in the island of Arbe, which produces excellent wines. See ARBE.

BARBADOES, the most easterly of all the Carribee Islands, subject to Great Britain, and, according to the best geographers, lying between 59° 50′ and 62° 2′ W. long., and between 12° 56′ and 13° 16′ N. lat. It is seventy miles from St. Vincent's. Its extent is not certainly known; but, according to Edwards, the length of the island is twenty-one miles, and its breadth fourteen. From the returns to parliament in 1811, it appears that the population of its different parishes was at that time as follows:—viz.

Parishes.	Whites.	Free color.	Slaves.
St. Michael .	5405	1551	12,198
Christ Church	1570	66	9234
St. Philip .	1510	212	9682
St. John . .	1148	887	58
St. Joseph .	1066	77	3104
St. Andrew .	571	165	3249
St. Lucy . .	1043	34	5282
St. Peter . .	1356	223	5725
St. James .	708	33	4295
St. Thomas .	773	31	4003
St. George .	1139	113	5428
	16,289	3392	62,258

By latest returns the population was,	Whites & Free Color	Slaves.
	21,000	79,000

The population of the island, therefore, was 100,000; and from this statement it appears that the number of slaves had increased at a comparatively slow rate during a period of twenty years, i. e. from 1811 to 1831. It was affirmed by Mr. Wilberforce, in the House of Commons, in the course of the debates on the slave trade, that in the former of these years there were 63,248 slaves on the island; in 1786 the number was 62,115; and in 1811 they were, as we see, 62,258. Barbadoes is supposed to have attained the summit of prosperity more than a century ago; and between the great planters and the people of color here there is a numerous and remarkable class of inhabitants, descended from the original settlers, who have no precise knowledge when their ancestors arrived at the island. These, consequently, consider it as their country, and do not look back, therefore, like the planters or the negroes, to early associations or other scenes as their home. At a distance, Barbadoes presents a brown and nearly uniform surface; and the West Indians generally think it a very flat country; but on a nearer approach the prospect improves, and the scenery becomes more diversified. The ground rises in singular and almost regular ridges from the shore. Rugged acclivities of about 100 feet each are separated by plains or terraces, nearly half a mile broad, and these, highly cultiv
a strong contrast with the black rocky
and bold promontories, projecting
ravines covered with dark foliage, by
are surrounded.

When Barbadoes was first settl
English, in 1605, few or no quadr
found upon it except hogs, which h
there by the Portuguese. For con
carriage to the sea-side, some of t
at first procured camels, which u
would, in all respects, have been p
horses for their sugar and other worl
nature of the climate disagreeing wi
mal, it was found impossible to p
breed. Some gentlemen of small
England resolved at this time to bec
turers thither. The trees were large
wood so hard and stubborn that i
great difficulty they could clear as m
as was necessary for their subsisten
unremitting perseverance they brough
them a tolerable support. They
cotton and indigo agreed well with th
that tobacco, which was beginning to
repute in England, answered tole
These prospects, together with the
tween the king and parliament, wh
ginning to break out in England, ind
to transport themselves into this isla
great was the increase of people in
within twenty-five years after its first
that in 1650 it contained more t
whites, and a much greater number o
Indian slaves. They now applied fo
Old and New England: from the
had those that were fit for show an
from the latter those that were proper
ing their militia, and for the saddle.
likewise some of an inferior breed fro
and other settlements. They are
have had their first breed of black
Bonavista and the Isle of May; they
upon the island, and often do the wo
The sugar, which soon after this wa
rendered them extremely wealthy.
of slaves, therefore, was still augmen
1676 it is supposed that they amounte
which, together with 50,000 whites, m
on this small spot: a degree of po
known in Holland, in China, or any
the world most renowned for numbe
time Barbadoes employed 400 sail
with another 150 tons, in their trade
nual exports in sugar, indigo, gin
and citron-water, were above £3
their circulating cash at home wa
Such was the increase of populatio
wealth, in the course of fifty years. T
are very serviceable in carrying bu
from the plantations. The hogs of B
finer eating than those of Britain,
sheep they have are not near so
likewise have goats, which when y
cellent food. Racoons and monk
found here in great abundance.
birds are produced on Barbadoes,
humming-bird is the most remarkab
do not often frequent this island; b

found near their ponds. A bird which
the man of war, is said to meet ships
leagues from land, and their return is
habitants a sure sign of the arrival of
ips. When the wind blows from the
d south-west they have flocks of cur-
overs, snipes, wild pigeons, and wild
The wild pigeons are very fat and plen-
uch seasons, and rather larger than those
nd. The tame pigeons, pullets, ducks,
try of all kinds, that are bred at Barba-
e also a fine flavor, and are accounted
licious than those of Europe. Their
re scarce; they have no hares; and the
they have are kept as curiosities. The
f Barbadoes are not venomous, nor do
eir snakes or scorpions ever sting. The
es are troublesome, and bite; but are
erable in Barbadoes than on the conti-
arious other insects are found on the
ome of which are troublesome, but in no
egree than those that are produced by
rm summer in England. Oranges and
row in Barbadoes in great plenty, and
utmost perfection. The lemon juice
a peculiar fragrancy. The citrons of
es afford the best drams and sweetmeats
the world, the Barbadoes ladies excel-
e art of preserving the rind of the fruit.
-apple is also a native of Barbadoes,
s there to much greater perfection than
made to do in Europe. A vast num-
fferent trees, peculiar to the climate, are
d to flourish in Barbadoes in great per-
such as the aloe, mangrove, calabash,
otton, ginger, plantains, guavas, mastic,
re likewise are produced some sensitive
ith a good deal of garden stuff. Bar-
s well supplied with fish; and some
the sea surrounding it are almost pe-
itself, such as the parrot-fish, snappers,
allos, terbums, and coney-fish. The
lobsters, and crabs, caught here are ex-
and the green turtle is perhaps the
delicacy that ancient or modern luxury
t of. At Barbadoes this delicious shell-
m sells for less than a shilling a pound,
n for more. There is found in this
kind of land-crab which eats herbs
r it can find them, and shelters itself in
d hollows of trees. According to re-
are a shell-fish of passage; for in March
d to the sea in great numbers. See CANCER.
oes is considered by some writers as
s fertility diminished by long cultiva
d its produce is, therefore, thought to
n proportion to the quantity of land.
chiefly rests upon a basis of calcareous
med of madripores and other marine
ns. In some places it is composed of a
k mould; red earth, of the same kind
aica, is also found, and sometimes the
onsists of a species of light white earth,
chiefly indurated argil, bleached by ex
Barbadoes on the whole must be con-
s an important possession: its situation
t the key to the West Indies; and its
affords an excellent rendezvous for ship-
ile the salubrity of its climate exceeds that of most of the other West India islands. But it has been thought to decline considerably since the year 1787, a circumstance ascribed to the dreadful succession of hurricanes with which it has been visited. The capital of the island was scarcely risen from the ashes to which it had been reduced by fire, when it was torn from its foundations, and the whole country made a scene of desolation by the storm of the 10th of October, 1780. Above 4000 of the inhabitants miserably perished, and the damage of property was computed at above one million sterling. Independent of those sudden calamities, arising from the fury of the elements, its inhabitants are also subject to a distressing malady, in the form of an elephantiasis, so peculiar to this island that it has obtained the appellation of the Barbadoes disease. Dr. Pinckard, however, describes the heat as less inconvenient than he expected. In the harbour, and placed in the shade, the thermometer seldom rose higher than 84°, and never exceeded 86°. The inhabitants may be considered in three classes, viz. the masters, white servants, and blacks. The former are either English, Scots, or Irish; but the great encouragement given by government to the peopling this and other West India islands, induced some Dutch, French, Portuguese, and Jews, to settle among them with their estates; by which, after a certain time, they acquire the rights of naturalization in Great Britain. The white servants, whether by covenant or purchase, are said to live more easy lives than the day-laborers in England; and when they come to be overseers, their wages and other allowances are considerable. The earliest planters of Barbadoes were reproached with cruelly forcing into slavery the Indians of the neighbouring continent; and the history of Inkle and Yarico, which Mr. Addison, in his Spectator, has recorded for the detestation of mankind, took its rise in this island.

We retain from a preceding work of this kind an illustration of this subject; not the most glaring, perhaps, which has happened in the same quarter of the world; as it displays at once the savage cruelty of a man bred among Christians, and the noble disinterested friendship and true greatness of soul, in those too often considered barbarians. A planter in Virginia, who was owner of a considerable number of slaves, instead of regarding them as human creatures, and of the same species with himself, used them with the utmost cruelty, whipping and torturing them for the slightest faults. One of these, thinking any change preferable to slavery under such a barbarian, attempted to make his escape among the mountain Indians; but unfortunately was taken and brought back to his master. Poor Arthur (this was his name) was immediately ordered to receive 300 lashes. These were to be given him by his fellow slaves, among whom there happened to be a negro whom the planter had purchased on the preceding day. This slave, the moment he saw the unhappy wretch destined to the lashes, rushed forward, clasped him in his arms, and embraced him with the greatest tenderness: the other returned his transports, and nothing could be more moving than their mutual bemoaning each other's misfortunes.

Their master was soon given to understand that they were countrymen and intimate friends; and that Arthur had formerly, in a battle with a neighbouring nation, saved the life of his friend at the expense of his own. The newly purchased negro threw himself at the planter's feet, with tears, beseeching him, in the most moving manner, to spare his friend, or at least to permit him to undergo the punishment in his stead, protesting he would rather die ten thousand deaths than lift his hand against him. But the haughty planter, looking on this as an affront to the absolute power he pretended over him, ordered Arthur to be immediately tied to a tree, and his friend to give him the lashes; telling him that for every lash not well laid on, he should himself receive a score. The negro, amazed at a barbarity so unbecoming a human creature, with a generous disdain refused to obey him, at the same time upbraiding him with his cruelty; upon which, the planter turning all his rage on him, ordered him to be immediately stripped, and commanded Arthur, to whom he promised forgiveness, to give his countryman the lashes which he himself had been destined to receive. This proposal was heard with scorn, each protesting he would rather suffer the most dreadful torture than injure his friend. This generous conflict, which must have raised the strongest feelings in a breast susceptible of pity, did but the more inflame the monster, who now determined they should both be made examples of, and, to satiate his revenge, was preparing to begin with Arthur, when the negro drew a knife from his pocket, stabbed the planter to the heart, and, at the same time struck it to his own, rejoicing with his last breath, that he had avenged his friend, and rid the world of such a monster. —*Encyclo. Perthensis.*

In 1831 this island was again visited by a hurricane, by which 3000 souls perished. St. Vincent may be seen from Barbadoes in a clear day. It is twenty-five miles only from St. Lucia; twenty-eight south-east from Martinico; sixty north-east from Trinidad; and 100 south-east from St. Christopher.

Barbadoes, Flower-Fence. See Poinciana.

Barbadoes Tar, a bituminous substance, differing little from the petroleum floating on several springs in England and Scotland. It is a mineral fluid of the nature of the thicker fluid bitumens, of a nauseous bitterish taste, very strong and disagreeable smell, found in many parts of America, trickling down the sides of the mountains, and sometimes floating on the surface of the waters. It has been greatly recommended in coughs, and other disorders of the breast and lungs.

BARBANA, a district and village of the late maritime Austria, in the province of Istria, seated on the Arza, with two forts.

BARBARA, in logic, the first mode of the first figure of the syllogisms. A syllogism in barbara is that whereof all the propositions are universal and affirmative; the middle term being the subject in the first proposition, and attribute or predicate in the second. Example:

BAR Whoever suffers a man to starve, whom
he is able to sustain, is a murderer:
BA Whoever is rich, and refuseth
alms, suffers those to starv
he is able to sustain:
RA Therefore, whoever is rich, an
to give alms, is a murderer.

Barbara, sister and successor of
queen of Angola.

Barbara, St., an island on the coast o

Barbara, St., the capital of New Bis

BARBARANO, a district of maritime
in the Vicentino, on the banks of the Bacc
among the Berean hills, containing one
the same name, &c., and fifteen populous

BARBARIANI. See Barbelicote

BARBARICARII, in antiquity, 1.
who, with threads of divers colors, expr
figures of men, animals, &c., or whose
was to gild and decorate shields and
with gold and silver. They were so
because they learned these arts from th
gians, who were particularly denomina
barians, in regard of their opposition
Greeks. The name is sometimes also
branbaricarri. 2. Soldiers, or officers, w
masks and vizards thus adorned with g
silver.

BARBARICUM, in ancient writers,
litary shout raised by the soldiers on poi
gagement; so called from the barbarians,
armies this method much prevailed: 2.
expedition undertaken against the bar
Quousque ad ipsum tempus quo barbari
ortem est inter nos et vos: 3. An ar
magazine, wherein the Greek emperors
spoils taken from the barbarians.

Barbaricum, in botany, an appellati
by the modern Greeks to rhubarb; so cal
the sinus barbaricus, by the way of wh
root was first brought to them.

BARBARICUS, in entomology, a sp
cimex (reduvius) of a black color; the
wing-cases obscure ferruginous, and
white line on the middle of the scutel
native of Barbary. Gmelin.

Barbaricus, in ornithology, a specie
lus that inhabits Barbary; the Barbar
Latham; and, 2. A species of turdus, o
color, with the breast spotted with white
and tip of the tail yellow. It is the gr
sette de Barbarie of Buffon, and the
thrush of Linnæus.

BARBARIES, that rudeness of mind
the understanding is neither furnish
useful principles, nor the will with good
tions.

BAR'BARIZE,	Gr. *βαρβα*
Bar'barism,	*barbarus*, of
Barba'rity,	etymology,
Barba'rian, *n.* & *adj.*	to any natior
Barba'rick, *n.* & *adj.*	or thing, wh
Bar'barous,	cates a wan
Bar'barously,	ture. It is
Bar'barousness.	in all respec

lisation. It seems to have signified at
foreign, or a foreigner. The Greeks app
all nations but themselves, and convey
an idea of disparagement and contemp
now applied to every species of wildnes
ness, and cruelty; to untaught savages;

out pity; to ignorance of arts and
earning; to inaccuracies, vulgarisms,
of speech and language; and to inci-
nanners. Bruce has shown, that *bar-*
rbarine, and *barberin*, are names derived
ber or *Barbar*, the native name of the
he troglodytæ, ichthyophagi, and shep-
goes down the whole western coast of
Sea. The Egyptians hated and feared
was therefore in Egypt a term both of
l contumely; in which sense it passed
reeks, and from them to the Romans.
ize, is to reduce to a state of *barbarism*;
or cause to be made, fierce, cruel, and
d.

e the Corinthians prounde only by reason of
e, but also because they were learned in the
philosophy, and therefore despised they
ere not learned therein as rude and *bar-*
Udall.

eed I say more to you? What ear is so
but hath heard of Amphialus? *Sidney.*

loubtful damsel dare not yet commit
gle person to their *barbarous* truth.
Spenser. Faerie Queene.

ave for *barbarism* spoke more
for that angel knowledge you can say.
Shakspeare.

art a Roman; be not *barbarous.* *Id.*

al tongue gave him his welcome home;
was thrown upon his sacred head;
th such gentle sorrow he shook off,
till combating with tears and smiles,
s of his grief and patience,
not God for some strong purpose steel'd
s of men, they must perforce have melted,
rism itself have pitied him. *Id.*

l they were *barbarians*, as they are,
Rome littered. *Id. Coriolanus.*

tion ought to be had in tempering and ma-
e Irish, to bring them from their delight of
barbarism unto the love of goodness and ci-
Spenser's Ireland.

great monarchies have risen from *barbarism*
, and fallen again into ruin.
Davies on Ireland.

rous country must be broken by war, before
ble of government; and when subdued, if
well planted, it will eftsoons return to *bar-*
Id.

governor, Philip, for his country a Phry-
for manners more *barbarous* than he that set
. *Macc.*

groaning country bled at every vein,
murders, rapes, and massacres prevail'd,
churches, palaces, and cities blaz'd,
nsolence and *barbarism* triumph'd,
ept away distinction. *Rowe.*

heir *barbarous* usage, he died within a few
he grief of all that knew him. *Clarendon.*

ey did treat him with all the rudeness, re-
nd *barbarity*, imaginable: *Id.*

rbarousness of the trial, and the persuasives
rgy, prevailed to antiquate it.
Hale's Common Law.

rgeous East, with richest hand,
n her kings *barbarick* pearl and gold.
Paradise Lost.

t Petrarch follow'd, and in him we see
hyme, improv'd in all its height, can be;
a pleasing sound, and sweet *barbarity*.
Dryden.

They who restored painting in Germany, not having those reliques of antiquity, retained that *barbarous* manner. *Id.*

Latin expresses that in one word, which either the *barbarity* or narrowness of modern tongues cannot supply in more. *Id.*

The genius of Raphael having succeeded to the times of *barbarism* and ignorance, the knowledge of painting is now arrived at perfection.
Id. Dufresnoy, Preface.

The language is as near approaching to it, as our modern *barbarism* will allow; which is all that can be expected from any now extant.
Id. Juvenal, Dedication.

The eastern front was glorious to behold,
With diamond flaming, and *barbarick* gold.
Pope.

Some felt the silent stroke of mould'ring age,
Barbarian blindness. *Id.*

We *barbarously* call them blest,
While swelling coffers break their owner's rest.
Stepney.

Excellencies of music and poetry are grown to be little more, but the one fiddling, and the other rhiymng; and are indeed very worthy of the ignorance of the friar, and the *barbarousness* of the Goths.
Temple.

Proud Greece all nations else *barbarians* held,
Boasting her learning all the world excell'd.
Denham.

There were not different gods among the Greeks and *barbarians*. *Stillingfleet.*

But with descending show'rs of brimstone fir'd,
The wild *barbarian* in the storm expir'd. *Addison.*

She wishes it may prosper; but her mother used one of her nieces very *barbarously*. *Spectator.*

Thou fell *barbarian*,
What had he done? What could provoke thy madness,
To assassinate so great, so brave a man?
A. Phillips.

This moon, which rose last night, round as my shield,
Had not yet fill'd her horns, when by her light,
A band of fierce *barbarians*, from the hills,
Rush'd like a torrent down upon the vale,
Sweeping our flocks and herds. *Home.*

The *barbarians* of Germany, still faithful to the maxims of their ancestors, abhorred the confinement of walls, to which they applied the odious names of prisons and sepulchres; and fixing their independent habitations on the banks of rivers, the Rhine, the Moselle, and the Meuse, they secured themselves against the danger of a surprise, by a rude and hasty fortification of large trees, which were felled and thrown across the roads. *Gibbon.*

We shall be *barbarized* on both sides of the water, if we do not see one another now and then, we shall sink into surly brutish Johns, and you will degenerate into wild Irish.
Burke. Letter to Sir C. Bingham.

That saddening hour when bad men hotlier press,
But these did shelter him beneath their roof,
When less *barbarians* would have cheer'd him less,
And fellow-countrymen have stood aloof—
In aught that tries the heart, how few withstand
the proof! *Byron. Childe Harold.*

BARBARISM, a name applied by St. Epiphanius, to the most ancient of the four primitive religions; that which worshipped hills, trees, and fountains.

BARBAROLOGIA, barbarology, a word used

enemy, he caused a great deal of his ate, jewels, &c. to be scattered all the king they would not fail to stop their gather it up. This stratagem, how- d, through the vigilance of the Spanish ler, who being at the head of the pur- ged them to march on, till he was come to him on the banks of the Huexda, ht leagues from Tremecen. Barbarossa crossed the river with his vanguard, Spaniards came up with his rear on r side, and cut them all off; and then the water, overtook him at a small dis- om it. Here a bloody engagement en- which the Turks fought like lions; but t length overpowered by numbers, they l cut to pieces, and Barbarossa among the the forty-fourth year of his age, and four fter he had raised himself to the royal Jigel of the adjacent country; two years e had accomplished the reduction of Treme- His head was carried to Tremecen, on oint of a spear; and Abuchen-Men pro- ned king, to the joy of all the inhabitants. w days after, the king of Fez appeared at the d of 20,000 horse, near the field of battle; hearing of Barbarossa's defeat and death, rched off with all possible speed.

Barbarossa (Hayradin), upon his brother's ath, assumed the sceptre at Algiers with equal bilities, but with better fortune; for the Spa- iards, sufficiently employed in Europe, giving im no disturbance, he regulated the interior po- ice of his kingdom with great prudence, carried on his naval operations with vigor, and extended his conquests on the continent of Africa. But perceiving that the Moors and Arabs submitted to his government with the utmost impatience, and being afraid that his continual depredations would one day draw upon him the arms of the Christians, he put his dominions under the pro- ection of the Grand Seignior, and received from him a body of Turkish soldiers, sufficient for his ecurity against his domestic, as well as his fo- eign enemies. At last the fame of his exploits aily increasing, Solyman, the Turkish emperor, ffered him the command of his fleet, as the only erson whose valor and skill entitled him to mmand against the famous Andrew Doria. roud of this distinction, Barbarossa repaired to onstantinople; and with a wonderful versatility mind, mingling the arts of a courtier with the ldness of a corsair, gained the entire confi- nce both of the sultan and his vizier. To them communicated a scheme he had formed of aking himself master of Tunis, the most flourish- kingdom at that time on the coast of Africa; ich being approved of, they gave him what- er he demanded for carrying it into execution. obtained it in a manner similar to that by ich his brother gained Algiers; but was driven m it by Charles V. in 1536. After this he aged several parts of Italy, and reduced Ye- n, in Arabia Felix, to the Turkish government. died in 1547, aged 80. See Algiers.

Barbarossa was also a title or surname of derick I. emperor of Germany, one of the t sovereigns in Europe who ventured to speak ely of the papal hierarchy, and the pride of the popes. Of the cardinals he said, Cardinalis non esse prædicatores sed prædatores;—the cardinals were not preachers, but plunderers. This was so early as A.D. 1155. See Germany.

Barbarossa, in entomology, a species of scarabæus, a native of New Holland. The anterior part of the thorax is scabrous; horns of the head recurved and short.

BARBAROUX (Charles), a French republican, and a sufferer by the guillotine. He was a native of Marseilles, and became a member of the national assembly. He was a great adversary to Robespierre and Tallien, against whom he brought many charges. He likewise proposed the trial of the king and the royal family. On the overthrow of the Girondist party, he was arrested, but found means to escape. Some time after, however, he was seized, and brought to the guillotine at Bourdeaux, on the 25th of June, 1794.

BARBARUS (Daniel), a noble Venetian, patriarch of Aquileia, and famous for his learning, was ambassador from Venice to England; and one of the fathers of the council of Trent, where he acted with great zeal for the interest of the pope. He wrote, 1. A Commentary upon Vitruvius. 2. Catena Græcorum Patrum in quinquaginta Psalmos Latine versa. 3. La Pratica della Perspectiva. He died in 1569, aged 41.

Barbarus (Francis), a noble Venetian, of the same family with Daniel. He was born in 1398, and gained great fame in the fifteenth century, not only for his learning, but for a skilful address in the management of public affairs. He wrote a book De Re Uxoria, on the Choice of a Wife and the Duties of Women; and translated some of Plutarch's Lives. He died in 1454. His book, De Re Uxoria was printed at Paris in 1515, and his Letters in 1743.

Barbarus, (Hermolaus), grandson of Francis, one of the most learned men of the fifteenth century. The public employments he was entrusted with early, did not prevent him from cultivating letters. He understood the most difficult authors; wrote a celebrated paraphrase upon Aristotle; and corrected and translated Dioscorides, and added a commentary. But of all his works none gained him so much reputation as his commentary upon Pliny; wherein he corrected above 5000 passages, and oecasionally restored 300 in Pomponius Mela. Pope Innocent VIII. to whom he was ambassador, conferred upon him the patriarchate of Aquileia. He imprudently accepted it without waiting for the consent of his superiors; though the republic of Venice had made laws forbidding the ministers they sent to the court of Rome to accept any benefice. The haughty aristocrats were inflexible; and not being able to gain any thing upon them either by flattery or his father's interest, the father died of grief, and the son soon followed him.

Barbarus (Hermolaus), was a nephew of Francis, and distinguished himself by his knowledge of the Greek language. At the age of twelve years he translated some of Æsop's Fables into Latin. He was successively bishop of Trevisa and of Verona, and died at the latter in 1470.

Barbarus, in entomology, 1. A species of papilio; the wings without tails, and blueish. 2. A species of tenebrio, of a black color, and very glossy. 3. A species of cryptocephalus that inhabits Barbary.

Barbarus, in ichthyology, a species of syngnathus, found in European seas.

Barbarus, in ornithology, a species of brown vulture that inhabits Barbary, and some other parts of Africa. The vultur barbatus, Briss. Orn. and bearded vulture of Edwards and Latham. Also a species of Falco, called by the English writers Barbary falcon.

BARBARY, a part of Africa, including the states of Fez, Algiers, Morocco, Tripoli, and Tunis. This country contains almost the whole of what the Romans possessed of the continent of Africa, excepting Egypt. It stretches in length, from east to west, from Egypt to the straits of Gibraltar, full 35° of longitude; and from thence to Santa Cruz, the utmost western edge of it, about six more, in all 41°. On the south, indeed, it is confined within much narrower bounds, extending no further than from 27° to 35½° N. lat. In this view of it Barbary begins on the west of the famed mount Atlas, called by the Arabs Al Duacal, enclosing the ancient kingdoms of Suez and Dela, now provinces of Morocco; thence stretching along the Atlantic to the pillars of Hercules at cape Finisterre, then along the coast of the Mediterranean, it is at last bounded by the city of Alexandria in Egypt. In the ancient world this comparative desert was rendered interesting by being the seat of the Carthaginian empire; and portions of it were then so fruitful, that Northern Africa was sometimes denominated the granary of Italy.

Concerning the origin of the name there are many conjectures. According to some, the Romans, after they had conquered this large tract of country, gave it the name of Barbary, out of dislike to the manners of the natives, according to their custom of calling all other people but themselves and the Greeks, Barbarians. Marmol, on the contrary, derives the word Barbary from Berber, a name which the Arabs gave to its ancient inhabitants, on account of the barrenness of the country, and which they retain to this day in many parts of it, especially along the great ridge of the mountains of Atlas. According to Leo Africanus, the name of Barbary was given by the Arabs on account of the strange language of the natives, which appeared to them more like the grumbling of brutes than articulate sounds. Others derive it from the Arabic word bar, signifying a desert, which was given by one Africus, a king of Arabia, from whom the whole continent of Africa is said to have taken its name; and who being driven out of his own dominions, and closely pursued by his enemies, some of his retinue called out to him Bar-bar; that is, To the desert, to the desert; from which the country was afterwards called Barbary.

Gibbon (Decline and Fall Rom. Emp. v. ix.) says that the history of the word Bar-bar is divisible into four periods. 1. In the time of Homer, when the Greeks and Asiatics might probably use a common idiom, the imitative sound of Bar-bar, was applied to the ruder tribes, whose pronunciation was most harsh, whose gran
most defective. Καρες Βαρβαροφωνοι
867. with the Oxford Scholiast, Clarke'
tions and Henry Stephens's Greek Thes
i. p. 720.) 2. From the time, at least,
tus, it was extended to all nations
strangers to the language and manne
Greeks. 3. In the age of Plautus, th
submitted to the insult (Pompeius Fe
p. 48. ed. Dacier), and freely gave then
name of Barbarians. They insensibly
exemption for Italy, and her subject
and at length removed the disgraceful
to the savage or hostile nations beyond
of the empire. 4. In every sense it
the Moors; the familiar word was borr
the Latin provincials by the Arabian c
and has justly settled as a local den
(Barbary) along the northern coast of

By the Romans, this country was di
the provinces of Mauritania, Africa Pr
and they continued absolute masters
the time of Julius Cæsar till A. D. 428
time Bonifacius, the Roman governor of
vinces, having through the treachery
been forced to revolt, called to his
Genseric king of the Vandals, who had
time settled in Spain. The terms offe
ding to Procopius were, that Genseric s
two thirds, and Bonifacius one third,
provided they could maintain themsel
the Roman power; and to accomplish
were to assist each other to the utm
proposal was instantly complied with;
seric set out from Spain in May 428, wi
of 80,000 men, according to some, or o
according to others, together with th
children, and all their effects. In the
the Empress Placidia, having discover
cause of Bonifacius's revolt, wrote a m
ing letter to him, in which she assure
her favor and protection for the future,
him to return to his duty, and exert
zeal for the welfare of the empire; by
the Barbarians, whom the malice of h
had obliged him to call in for his own
preservation. Bonifacius readily com
offered the Vandals considerable sum
would return to Spain. But Genseric
master of the greatest part of the count
ing a scornful answer, and falling un
on him, cut most of his men in pi
obliged Bonifacius himself to fly to Hip
he invested in May 430. The siege
July 431, when the Vandals were force
mine that began to rage in their camp
the enterprise, and to retire. Soon af
facius having received two reinforcem
from Rome, and the other, under the
Aspar, from Constantinople, a resolu
taken by the Roman generals to offer t
battle. A bloody engagement ensued,
the Romans were utterly defeated, a
number of them taken, and the rest o
shelter themselves among the rocks and m
Aspar, who commanded the eastern
escaped with difficulty to Constantin
Bonifacius was recalled to Italy. Upon
parture, the Vandals overran all Africa, c

everywhere the most terrible ravages, which struck the inhabitants of Hippo with such terror, that they abandoned the city, which was first plundered, and then set on fire by the victorious enemy; so that Cirtha and Carthage were now the only strong places possessed by the Romans. In 435, Genseric, afraid of an attack by the united forces of the eastern and western empires, concluded a peace with the Romans, who yielded to him part of Numidia, the province of Proconsularis, and Byzacene, for which, according to Prosper, he was to pay a yearly tribute to the emperor of the east. Genseric delivered up his son Hunneric by way of hostage; but so great was the confidence which the Romans placed in that barbarian, that some time after they sent him back his son. Of this they soon had reason to repent; for in 439, the Romans being engaged in a war with the Goths in Gaul, Genseric laid hold of that opportunity to seize upon the city of Carthage; by which he considerably enlarged his African dominions. Valentinian, however, retained as long as he lived, the two Mauritanias with Tripolitana, Tingitana, and that part of Numidia where Cirtha stood. On taking Carthage, Genseric made it the seat of his empire; and in 440 ravaged the island of Sicily, and laid siege to Palermo. Not being able, however, to reduce that place, he soon returned to Africa with an immense booty, and a vast number of captives, Being now become formidable to both empires, Theodosius, emperor of the east, resolved to assist Valentinian against so powerful an enemy. Accordingly, he fitted out a fleet consisting of 1100 large ships; and putting on board of it the flower of his army, under the conduct of Arcovindas, Ansilus, and Germanus, he ordered them to land in Africa, and joining the western forces there, to drive Genseric out of the countries he had seized. But the latter, pretending a desire to be reconciled with both empires, amused the Roman general with proposals of peace, till the season for action was over; and, next year, Theodosius being obliged to recal his forces to oppose the Huns, Valentinian found it necessary to conclude a peace with the Vandals; and this he could obtain on no other terms than yielding to them the quiet possession of the countries they had over-run. So powerful was Genseric now become, or rather so low was the Roman empire by this time reduced, that in 455 he took and plundered the city of Rome itself (See Rome), and, after his return to Africa, made himself master of the remaining countries held by the Romans in that part of the world. Hereupon Avitus, who had succeeded Valentinian in the empire, despatched ambassadors to Genseric, putting him in mind of the treaty he had concluded with the empire in 442; and threatening if he did not observe the articles at that time agreed upon, to make war upon him, not only with his own forces, but with those of his allies the Visigoths, who were ready to pass over into Africa. To this Genseric was so far from paying any regard that he immediately put to sea with a fleet of sixty ships; but being attacked by the Roman fleet under Ricimer, he was utterly defeated, and forced to fly back into Africa. He returned, however, soon after, with a more powerful armament, committing great ravages on the coast of Italy: but in a second expedition he was not attended with so good success; the Romans falling unexpectedly upon his men, while busied in plundering the country, put great numbers of them to the sword, and among the rest the brother-in-law of Genseric himself. Encouraged by this advantage, Majorian, then emperor, resolved to pass over into Africa, and attempt the recovery of that country. For this purpose he made great preparations; but his fleet being surprised and defeated by the Vandals, through the treachery of some of his commanders, the enterprise miscarried Notwithstanding this misfortune, Majorian persisted in his resolution, and would in all likelihood have accomplished his purpose, had not he himself been murdered soon after by Ricimer. After his death Genseric committed what ravages he pleased in the poor remains of the western empire, and even made descents on Peloponnesus and the islands belonging to the emperor of Constantinople. In revenge, Leo made vast preparations for the invasion of Africa, insomuch that, according to Procopius, he laid out 130,000 pounds weight of gold in the equipment of his army and navy. The forces employed on this occasion were sufficient for expelling the Vandals, had they been much more powerful than they were; but the command being given to Basiliscus, a covetous and ambitious man, the fleet was utterly defeated through his treachery, and all the vast preparations came to nothing. By this last defeat the power of the Vandals in Africa was fully established, and Genseric made himself master of Sicily, as well as all the other islands between Italy and Africa, without opposition from the western emperors, whose power was entirely annihilated, A. D. 476. Thus was the Vandalic monarchy in Barbary founded by Genseric, between the years 428 and 468. That prince's government, in his new dominions, presents no very agreeable prospect. Being himself a barbarian in the worst sense of the word, and an utter stranger to every useful art, he displayed his prowess by the destruction of all the monuments of Roman greatness, which were so numerous in the country he had conquered. Instead of improving the country he laid it waste, by demolishing all the stately structures both public and private with which those proud conquerors had adorned this part of their dominions. Monuments which the Romans had been at an immense expense to erect, the barbarous Vandals reduced to heaps of ruins. Besides this kind of devastation, Genseric made his dominions a scene of blood, by persecuting the orthodox Christians; being himself, as well most of his countrymen, zealously devoted to the Arian party. He died in 477, after a reign of sixty years; and was succeeded by his son Hunneric, who also proved a still greater tyrant than his father, persecuting the orthodox with the utmost fury; and, during his short reign of seven years and a half, destroying more of them than Genseric had done in all his life. He died miserably; his flesh rotting upon his bones, and crawling with worms, so that he looked more like a dead carcase than a living man. Concerning his successors Gundamund, Thrasimund, and Hilderic, we find nothing remarkable, except that they sometimes persecuted, and sometimes were favorable to, the orthodox. Hilderic by favoring them was ruined; for, having published, in the beginning of his reign, a manifesto, wherein he repealed all the acts of his predecessors against them, a rebellion was the immediate consequence. He was deposed in the seventh year of his reign by Gilimer, a prince of the blood-royal, who caused the king with all his family to be closely confined, and himself to be crowned at Carthage. Gilimer proved a greater tyrant than any that had gone before him. He not only continued the persecutions of the orthodox, but horribly oppressed the rest of his subjects, so that he was held in universal detestation, when the Greek emperor Justinian projected an invasion of Africa. This expedition is fabled to have been occasioned by an apparition of Lætus, an African bishop, who had been murdered some time before, and now commanded the emperor to attempt the recovery of Africa, assuring him of success. Justinian, notwithstanding his being at that time engaged in a war with Persia, now, therefore, sent a powerful fleet and army to Africa, under the command of the celebrated Belisarius. At this time Gilimer was so much taken up with his pleasure that he knew little or nothing of the formidable preparations against him. On the arrival of Belisarius, however, he put himself in a posture of defence. The management of his army he committed to his two brothers, Gundimer and Gelamund, who accordingly attacked the Romans at the head of a numerous force. The engagement was long and bloody; but at last the Vandals were defeated, and the two princes slain. Gilimer, in desperation, sallied out at the head of his corps of reserve, to renew the attack with the utmost vigor; but by his own indiscretion lost a fair opportunity of defeating the Romans. For as soon as they perceived Gilimer hastening after them at the head of a fresh army, they fled and the greatest part were dispersed in such a manner, that, had the king followed them close, they must have been totally cut off. Instead of this, however, stumbling on the body of one of his slain brothers, the sight of it made him lose all thoughts of the enemy; and instead of pursuing them, he spent his time in idle lamentations, and in burying the corpse with suitable pomp. Belisarius had thus an opportunity of rallying, which he did so effectually, that, coming unexpectedly upon Gilimer, he easily gained a new and complete victory over him. This defeat was followed by the loss of Carthage, which the barbarians had been at no pains to put into a posture of defence. Gilimer, having in vain solicited assistance from the Moors and Goths, recalled his brother Zano from Sardinia, resolving to make one desperate attempt to regain the kingdom, or at least recover the captives. The consequence was another engagement, in which Zano was killed with 800 of his choicest men, while the Romans lost only fifty; after which Belisarius, moving suddenly forward at the head of his army, fell upon the camp of the Vandals. This Gilimer was no sooner apprised of than he fled towards Numidia in the utmost consternation. As soon as the flight was known among his troops, they abandoned their camp to the Romans, who plundered it, and massacred all the men that were left, carrying the women captives. Thus a total end was put to the power of the Vandals, and the Romans once more became the masters of Barbary. The Vandal inhabitants were permitted to remain, on condition of exchanging the heresy of Arius for the orthodox faith. Gilimer fled to Medamus, a town situated on the top of the Papuan mountains, and almost inaccessible by its height and ruggedness. The siege of this place was committed to Pharas, an officer of great experience, who having shut up all avenues to the town, the fugitive was reduced to the greatest straits for want of provisions. Pharas being apprised of the distress he was in, wrote him a friendly and pathetic letter, exhorting him to put an end to the distress of himself and his friends by a surrender. This Gilimer declined; but at the same time concluded his answer with a most submissive request, that Pharas would so far pity his great distress as to send him a loaf of bread, a sponge, and a lute. This strange request surprised Pharas, but was explained by the messenger, who told him that the king had not tasted any baken bread since his arrival on that mountain, and earnestly longed to eat a morsel of it before he died; the sponge he wanted to allay a humor that had arisen in one of his eyes; and the lute, on which he had learned to play, was to assist him in setting some elegiac verses, he had composed on the subject of his misfortunes, to a suitable tune. At this mournful report, Pharas could not refrain from tears, and immediately despatched the messenger with the things he wanted. Gilimer had spent nearly three winter months on the summit of this inhospitable mountain, his misery hardening him against the thoughts of surrendering, when a melancholy scene in his own family at once reconciled him to it. This was a bloody struggle between two boys, one of them his sister's son, about a flat bit of dough, laid on the coals; which the one seized upon, burning hot as it was, and clapped into his mouth, but the other by dint of blows forced it out, and eat it from him. The quarrel, which might have ended fatally, had not Gilimer interposed, made so deep an impression upon him, that he immediately despatched a messenger to Pharas, acquainting him that he was willing to surrender himself and all his effects upon the conditions he had offered, as soon as he was assured that they were embraced by Belisarius. Pharas lost no time in getting them ratified and sent back to him. Gilimer was afterwards brought in golden chains before Justinian, whom he besought in the most submissive manner to save his life. That emperor treated him with a degree of humanity he little merited; allowing him a handsome yearly pension to live upon as a private gentleman. But his mind was too much unsettled to enjoy the sweets of a private life; so that, oppressed with grief, he died in the first year of his captivity, five years after he had been raised to the throne, A. D. 554. Barbary being thus again reduced under the power of the Romans, its history falls to be noticed under that of Rome. In the khalifat of Omar this country was reduced by the Saracens, as the reader will find under the article KHALIFS. It continued subject to the khalifs of Arabia and Bagdad till the reign of aroun Al Raschid, who having appointed Ibraim Ebn Aglab, governor of the western parts of is empire, that prefect took the opportunity, st of assuming greater powers than had been anted by the khalif, and then erecting an indeendent principality. The race of Aglab connued to enjoy their new principality peaceably ll the year of the Hegira 297 or 298, during hich time they made several descents on the land of Sicily, and conquered part of it. bout this time, however, one Obeidallah reelled against the house of Aglab, and assumed e title of khalif of Kairwan, the ancient Cyrene, nd residence of the Aglabite princes. To give e greater weight to his pretensions he also took e surname of Al Mohdi, or Al Mohedi, the irector. He pretended to be descended in a ight line from Ali Ebn Abu Taleb, and Fatema the daughter of Mahomet; for which reason the Arabs called him and his descendents Fatemites. He likewise encouraged himself and his followers by a traditional prophecy of Mahomet, that at the end of 300 years the sun should rise out of the west. Having at length driven the Aglabites into Egypt, where they became known by the name of Magrebians, he extended his dominions in Africa and Sicily, making Kairwan the place of his residence. In the 300th year of the Hegira, Habbasah, one of Al Mohdi's generals, overthrew the khalif Al Mokhtader's forces in the neighbourhood of Barca, and made himself master of that city. After which he reduced Alexandria; and was making great progress in the conquest of the whole country, while Al Mokhtader sent against him his generals Takin and Al Kasem, with an army of 100,000 men. Habbasah, being informed that the khalif's troops were in motion, advanced at the head of his army to give them battle, and at last came up with them in an island called by the Arabs Ard Al Khamsin. Here he attacked them with incredible bravery, notwithstanding their force was much superior to his; but the approach of night obliged both generals to sound a retreat. The action therefore was by no means decisive, though extremely bloody, the khalif's generals having lost 20,000 men and Habbasah 10,000. The latter, however, durst not renew the fight next morning; but stole off in the night, and returned home, so that Al Mokhtader in effect gained a victory. In the 302d year of the Hegira, however, Habbasah returned, possessed himself of Alexandria a second time, defeated a body of the khalif's forces, and killed 7000 upon the spot. In the 307th year, Abul Kasem, son to Al Mohdi, entered Egypt with an army of 100,000 men. At first he met with extraordinary success, and overran considerable part of that fine country. He made himself master of Alexandria, Al Tayum, Al Baknasa, and the isle of Ashmaryin, penetraing even to Al Jizah, where the khalif's army nder the command of Munes was posted to opose him. In this country he maintained himself ll the 308th year of the Hegira, when he was ntirely defeated by Munes, who made himself master of all his baggage, as well as of the plunder e had acquired. This obliged Abul Kasem to y to Kairwan with the shattered remains of his rmy, where he remained without making any further attempt on Egypt. Al Mohdi reigned twenty-four years, and was succeeded by Abul Kasem, who then took the name of Al Kayem Mohdi. During his reign we read of nothing very remarkable, except the revolt of Yezid Ebn Condat, a man of mean extraction, but who, having been raised to the dignity of chancellor, found means to create such a strong party, that the khalif was obliged to shut himself up in the castle of Mohedia. Yezid, being then at the head of a powerful army, soon reduced the capital of Kairwan, the cities of Al Rakkada and Tunis, and several other fortresses. He was no less successful in defeating a considerable number of troops which Al Kayem had sent against him; after which he closely besieged the khalif himself in the castle seven months, when the khalif died, in the twelfth year of his reign, and 334th of the Hegira. Al Kayem was succeeded by his son Ishmael, who immediately took the title of Al Mansur, but concealed the death of his father till he had made preparations for reducing the rebels. In this he was so successful, that he obliged Yezid to raise the seige of Mohetdi, and in the following year obliged him to shut himself up in the fortress of Kothama, where he besieged him in his turn. Yezid defended the place a long time with desperate bravery, but, finding the garrison at last obliged to capitulate, he made shift to escape privately. Al Mansur despatched a body of forces in pursuit of him, who overtook, and brought him back in fetters, after a vigorous defence, in which Yezid got several dangerous wounds, of which he died in prison. After his death Al Mansur caused his body to be flayed, and his skin stuffed and exposed to public view. For Al Mansur's exploits in SICILY, see that article. Nothing farther remarkable happened in his African dominions. He died after reigning seven years and sixteen days, in the 341st of the Hegira, and was succeeded by his son Abu Zammin Moab, who assumed the surname of Al Moez Ledinilloh; and maintained a bloody contest with Abdalsahman, khalif of Andalusia: for a particular account of which, see SPAIN. In the 347th year of the Hegira, beginning March 25th A. D. 958, Al Moez sent a powerful army to the western extremity of Africa, under the command of Abul Hasan Jawhar, one of his slaves, whom he had advanced to the dignity of vizier. Jawhar first advanced to a city called Tahart, which he besieged for some time ineffectually. From thence he marched to Fez, which he took at last by storm in the following year. But the greatest achievement performed by this khalif was his conquest of Egypt, and the removal of the khalifat to that country. This conquest, though long projected, he did not attempt till the year of the Hegira 358. Having then made all necessary preparations for it, he committed the care of that expedition to an experienced general called Giafar, but in the mean time, this enterprize did not divert Al Moez from the care of his other conquests, particularly those of Sicily and Sardinia; to the last of which he sailed in the year of the Hegira 361, continuing a whole year in it, and leaving the care of his African dominions to an experienced officer named Yusef Ben Zeiri. He sailed thence the following year for Tripoli in Barbary, where he had not staid long, before he received the agreeable news that his general had made himself master of Alexandria. He lost no time, but immediately embarked for it, leaving the government of his old African dominions in the hands of his trusty servant Yusef, and arriving safely at that port was received with all the demonstrations of joy. Here he began to lay the foundations of his new Egyptian dynasty, which put a final end to the old one of Kairwan, after it had continued about sixty-five years. Al Moez, however, preserved all his old dominions of Barbary and Africa Proper. But the avarice of the governors, whom he appointed, occasioned them to run quickly to decay; particularly the new and opulent metropolis of Mohedia, on which immense sums had been lavished, so as to render it not only one of the richest and stateliest, but one of the strongest cities in the world. But the wealth and splendor of this once famed, short-lived state, took their leave of it with the departure of the khalif Al Moez. The whole maritime tract from the Egyptian confines to the Straits of Gibraltar has since become the nest of the most odious piratical crew that ever existed. Under the article Algiers we have given a short account of the erection of a new kingdom in Barbary by Texefien; which, however, is there no farther continued than is necessary for connecting the history of that country. A general history might here be given of the whole country of Barbary; but as that would occasion repetitions under the articles Morocco, Tripoli, Tunis, &c. we must refer to these articles for the rest of its history, as well as for other particulars not here mentioned.

The great natural feature of this region, and that which appears to exempt it from the sterility by which it is surrounded, is the mountain chain of Atlas. This celebrated range, which ancient fable imaged as the prop of heaven, has its loftiest pinnacles in the west, immediately behind Morocco; but it extends in various branches, which have been little explored, and at different heights, along the whole southern frontier of Algiers and Tunis, leaving a fertile tract of from 50 to 200 miles on the shores of the Mediterranean. Limestone is the predominant rock of this range, which in the western and loftier ranges appears in the form of marble, and afterwards in the looser forms of secondary limestone. The marbles of Numidia are well known in history. The metallic products are not well ascertained, from the unskilful manner in which they have been worked. Silver, copper, and lead, are found to a considerable extent in Algiers and Tunis. Iron, lead, copper, silver, antimony, and a mixture of antimony, lead and gold, are found in the mountainous districts; but none of them are worked to any great extent. Salt, in many places, especially in the southern countries bordering upon the Great Desert, completely impregnates the earth; and the water of the springs and pools, when evaporated, leaves a thick crust of saline matter: in others it appears in large solid masses. Springs, some of them hot, containing other mineral substances, particularly sulphur, are frequent; indicating the presence of great internal heat. At Hamman Mescouteen, near Constantia, the waters of a spring absolutely calcine the rock over which they pass.

Much of the general character and productions of this entire region appears in our article Algiers, now a French province: the whole is ill-cultivated. Of the improvements in agriculture they have no notion; and their industry is constantly checked by the pressure of a short-sighted and iniquitous government. Burned stubble and the litter of the cattle turned out upon the fallows, is the only manure they use. Their ploughing is done by a wooden plough, drawn by a single yoke of oxen, going over not more than one acre in a whole day. Two bushels and a half per acre is their ordinary allowance of seed-corn, and 1200 per cent. the return expected. Dr. Shaw found the Asiatic customs introduced by the Arabs everywhere prevailing; the ox is driven round the circular threshing-floor, to tread out the corn, which is afterwards winnowed by being thrown up against the wind, just as it was in Judea three thousand years ago. (Deut. xxv. 4. Is. xxx. 24.) The grain is deposited in large subterraneous magazines called matmórs, each containing at least 500 bushels. Wheat, maize, and different species of millet (sorghum), pulse, vetches, lentils, and caravances (garbanzos), chich-peas, (cicer arietinum), are their agricultural objects. Neither oats nor hay are used; but, as in western Asia, barley and chopped straw are substituted for them. Hemp, flax, cotton, and tobacco, make up the remainder of their field produce. Their gardens abound with figs, melons, oranges, lemons, and limes; vineyards and olive-yards are seen on the plains and declivities, and our common forest-trees, corks and evergreen oaks, in the woods. There are also some inferior kinds of fruit, such as the jujube, lote-tree (zizyphus lotus), [illegible] argan (elæodendrum arg.), diospyros [illegible] celtis australis, and cornelian cherry (cornus mascula), not common among us: some [illegible] resins, such as galbanum, opopanax, ammoniacum, and sandarac, the produce of the Arâr, [illegible] Juniperus communis, and medicinal herbs, such as wormwood, orrisroot (iris Germanica, Florentina), colocinth, or coloquintida, &c.

The climate is upon the whole temperate and salubrious, with considerable variations in the different regions. The formidable scorpion, the boa constrictor, and above all the dreaded locust, appear here; the latter in those prodigious swarms that convert a 'garden of Eden into the wilderness.' Here also range the lordly lion (who is nowhere seen more strong or ferocious), the panther, and the hyena. The last is said, however, not to manifest in its wild state the fierceness which it displays in our menageries, and which is generated by confinement. It seldom attacks man, unless molested by him; and boys are sometimes seen leading it about with ropes. It remains all day in its cave, [illegible] with its eyes fixed, and comes out in the night chiefly after dead bodies. The same is observable of the jackal, here called the deeb, about half the size of the hyena. The animal most valued is the antelope or gazel, whose beauty is the object of universal admiration here; the term gazel being employed as the highest [illegible] to a beautiful woman. The mutton is [illegible] here, but it is eaten as a great delicacy. The sheep of eastern Barbary, according to Shaw ave fleeces coarse and hairy, like those of the goat; but Morocco contains some breeds with very fine wool. That territory produces likewise he breed of goats whose skins yield the leather o much esteemed in Europe. The finest species s produced in Tafilet, on the southern side of he Atlas. They are tanned with the leaves of a hrub called tizre, which are thought by some to give them their peculiar softness and pliability. The tanners, however, conceal as much as posible the processes employed.

The government of each of the three states, Morocco, Tunis, and Tripoli, is deemed essentially despotic. For any varieties in their particular forms, we must refer the reader to the separate articles. The general population of Barbary consists of, 1. Moors, who are the ruling race; 2. Jews; 3. Arabs; and 4. Brebers, or ancient natives. The Moors are the chief inhabitants of the towns and cities. The term may be considered as including that portion of the Mahommedan conquerors of northern Africa who have habituated themselves to a settled mode of life, along with all the inhabitants who have been incorporated with them, and trained to the same religious habits, which here regulate all the social relations, and extend their influence to the minutest practices of life. The daily ceremonies of worship are very numerous. Prayer is repeated five times a day, once before, once after sun-set, and three times in the course of the day; the crier each time from the top of a minaret loudly announcing the hour. Necessity allows the Moor to worship in any spot where he may be placed, at these hours; but such devotions are not considered equally beneficial with the public ones. At the door of the mosque is a bath for ablution; and no worshipper must enter unless barefooted. Mr. Addison relates the contempt with which a Moor once spoke to him, of the indecencies of our admitting into Christian places of worship 'women, clogs, and dirty shoes,' all of which are here excluded.

The Jews, who are numerous, are the objects of constant insult and oppression. They are envied for their wealth, despised for their avarice, and abhorred as enemies to the faith; and, as in most of the states there exists no law for their protection, the hardships of their situation are nowhere greater. As they form, however, the only class capable of managing trade or money concerns, they make immense profits, the opportunity of reaping which no oppression can induce them to relinquish. The Arabs occupy, with their flocks and herds, all the interior and pastoral districts. They live in movable villages or douars composed of tents, which are generally arranged in concentric circles, around the habitation of the sheik. They are made of camels' hair and the fibres of the palm tree. In removing, they place on the backs of camels the women, children, and young animals, the latter enclosed in baskets. The interior government of these villages is entirely conducted by their own chief or sheik, who, when the supreme government is weak, often sets t at defiance. The Brebers inhabiting the mountain districts have a language of their own, which seems to be indigenous. They live in small fixed villages, and cultivate the ground. They also elect their own sheik, and have some forms of popular government; are very strong, athletic, and formidable. Their chief amusement consists in the use of the musket.

With respect to the habits and manners of Barbary, nowhere is grovelling ignorance subject to a worse tyranny on the part of knavish priests, called here marabits, or as the word is commonly written in Europe, marabouts. These men, affecting a scrupulous observance of the Koran, and continually repeating favorite texts, gain the reputation of extraordinary sanctity, and soon persuade the people to believe them the favorites of heaven. Some pretend to miraculous powers; others practise the arts of divination, and all deal in charms, from the sale of which they make great profits. The greater part wander about through the country, professing to live on charity, (they call themselve dervises or fakirs, i. e. poor men,) and doing far more mischief than the mendicants in Popish countries. Amongst all classes in Barbary their influence is uncontrolled. At the great festivals they give an entire loose to religious phrenzy, heightened probably by large doses of opium, and the excesses in which they then indulge are truly horrible. Mr. Lyon (Travels. ii.) saw a man thrust his hand into the side of a living ass, tear out his bowels, and devour them! Idiots and madmen are, on the same stupid principle, considered as half-inspired, and are therefore looked upon with veneration, and allowed to do all the mischief which their bewildered imagination suggests. The most simple arts are little known here. Though the hardest stone and better materials abound, timber, we are told by travellers, is almost the only thing used for building. They have, however, in some parts, a sort of artificial stone, called tabiah, a mixture of lime, sand, and pebbles, put into a wooden frame of the proper size and shape, and beaten down with square rammers; and a hard and durable cement, a compound of sand, wood ashes, and lime beaten together for three days and nights without intermission, and frequently sprinkled with oil and water. Another cement used by them is made of tow, lime, and oil. The houses are built round (sometimes paved) square courts, into which the windows open; the lower part is used as stables or out-houses, the upper part for the apartments of the family. In each story is an open corridor, with which stair-cases from below and all the chambers communicate. Sometimes a fountain appears in the centre of the court, and an awning is stretched across from side to side. The ordinary houses seldom have more than one story, about sixteen feet high, with an apartment on each side of the court; and the windows being small, the want of light and air are insufferable to Europeans. No fire-places appear: a charcoal fire, in an earthern chafing dish, placed in one corner of the court, serves to cook the dinner; and mattresses on the floors, with large cushions against the walls, are the seats by day and beds by night: at one end of the room, a raised platform sometimes receives the beds. Their household utensils consist of a few pewter plates, spoons and basins, wooden bowls, earthen pots, and iron ladles, some China plates for show, and perhaps a tea equipage. The roofs of their houses are flat, and in the cool of the day are much used by the females. The rich have often a small additional building, called ôliyyah, for the accommodation of strangers. It is like another house on a small scale, and is placed over the gateway at the entrance, exactly answering to the upper chamber of the Jews. Boarded ceilings, diversified by painted lattice work, walls covered half-way down with gilt and painted wainscoting, hangings of different colored cloths, or tyger-skins, filling the interval between the wainscot and the floor, looking-glasses, clocks, or arms arranged in fanciful patterns, are the decorations of their rooms; and the courts of better houses, paved with marble and elegantly covered above, form an agreeable saloon for their company.

Eastern Barbary is distinguished by several noble monuments of antiquity. The traces of Punic architecture indeed have in a great measure disappeared; and the labors of that celebrated people are only attested by subterraneous ruins, particularly those of the celebrated aqueduct, by which water was conveyed to it from the distance of upwards of sixty miles. The whole course of it may still be traced; and several arches are entire, seventy feet high, and supported by columns sixteen feet wide. The architectural ruins being of Roman erection, are chiefly of the composite order, the favorite one of that people. The temple at Spaitla appeared to Bruce to present a specimen superior to what is to be found on any other spot. In consequence of recent excavations, some very valuable remains of statuary have been dug up; and it is probable that, by the continuance of similar researches, further valuable discoveries might be made.

The dress of the inhabitants of Barbary is cumbersome, and unlike those of eastern climates generally. The men wear a red woollen skull-cap, called Fez, (where it is manufactured,) and a white shawl twisted round the head; linen and woollen trowsers, a cotton or silk shirt, a tunic called kaftàn, with or without sleeves, having rows of buttons down the front, kept close to the body by a sash folded round the waist; and a pair of yellow slippers. The better sort have a strip of velvet passed over the right shoulder, by which they suspend the sabre; and the dagger is stuck into the folds of the sash.

The arrangements in Barbary regarding the female part of society are the same as in all Mahommedan countries. The harem is supplied chiefly from Constantinople, by Georgian or Circassian slaves, trained for this purpose by persons who carry on this employment as a trade. The interior arrangements appear to differ considerably in the different states, and, so far as known, will be described respectively under each. The women are fattened to make them plump, the grand criterion of beauty; and their under dress resembles that of the men. Two broad straps pass over the shoulders from their girdle, and are crossed upon the breast. Their hair, as in the east, is tressed and braided, and a handkerchief is tied close round the head. They wear earrings from the upper and lower parts of the ears, and upon their ancles gold and silver rings. Their slippers are always red, and usually embroidered. Veils and hayics, and sometimes straw hats, form a part of their dress out doors. A black stripe down the forehead, along the nose, chin, and throat, is considered as a great improvement of their beauty. This is very conspicuous in a plate of the Tripolitine costume, given by Captain Lyon, p. 7. They use a profusion of hinna, for giving a red tint to their hair and fingers, and stibium (al-cohl), to blacken the inside of their eye-lids. Some days before a marriage the bride is visited by her female friends, and the bridegroom parades the streets on horseback, attended by his associates, a band of music, musketry, shouting, racing, &c. announce his expected joys. On the wedding day the bride is carried through the town in a sort of sedan-chair, fixed on the back of a mule or camel, (see plate at p. 299, Captain Lyon's Travels,) covered with silk or linen. In this attire, surrounded by torches, drums, and musketry, large bodies of her relations attend her home. Nor are the attendants of the bridegroom less dazzling and noisy. Arrived, the company retire, and he is left alone with his wife, whose veil he then removes for the first time.

The amusements in Barbary are the indolent Asiatic ones of smoking, tea, and pompous talk, or the most violent exercises, such as playing with the jerid, (see Jerid,) leap-frog, football, and a few more such games, probably borrowed from Spain; but one is quite peculiar to themselves: it consists of a sort of mock-fight; parties of horsemen riding full speed at each other, discharge their pieces, then wheel round and retreat. This is much like the game with the jerid; but to improve it they ride full gallop towards a wall, approach it as near as possible, then stop short and fire. Sometimes, instead of chasing a wall for this purpose, they chase a friend, when they think they cannot do him a greater honor, that by galloping up and discharging their muskets full in his face. Their lively musical airs are said to be simple and beautiful; but their serious ones dull and tedious. In riding they have a thong attached to the rein, which serves as a whip. Their spur is a long spike loosely attached to the foot, and carefully kept from the horse's side, except in case of need.

The principal and best manufacture here is morocco leather. Good carpeting is also made; mats of the palmetto; and cotton, silk and woollen cloths. Their swords and gun-barrels are also of home make. An inland traffic is maintained by periodical fairs; but the caravans, protected by their numbers, are the only safe medium of general commerce.

BARBASTELLUS, Vespertilio, in zoology, the tailed bat, with elevated hairy cheeks, and large ears, angulated on the lower part, the barbastelle of Buffon and Pennant.

BARBATA, in entomology, a species of brown cantharis that inhabits Germany. 2. A species of cicada (deflexa), of a brown color, and greenish abdomen. 3. A species of phalæna that inhabits Barbary. 4. A species of pimelia (Helops Fabr.) inhabiting Saxony. Fabricius.

ATA, in natural history, a species of co-
about three inches in length, that grows
hores of Jamaica. Ellis, in his work on
e, calls it the rosary or bead-coralline of
; it is the bead-band string of Plunket,
allina major, nervo cassiori fuciformi in-
a breviora nectente of Sloane. (Hist.
Also, a species of Nais.

ATA, in ornithology, is a species of frin-
Chili; and a species of muscicapa, inha-
ayenne: called by Linnæus, the whis-
y-catcher.

BATED LEAF, in botany, a leaf termi-
y a bunch of strong hairs.

BATELLI (Bernardino), otherwise called
i, an eminent painter of history, fruit,
, and flowers, was born at Florence in
He was the disciple of Ridolfo Ghirlan-
Florence, from whose school he went to
and studied there with such uncommon
y, that he was frequently so absolutely
ed by the objects of his contemplations,
rget the necessary refreshments of sleep
d. His touch was free, light, and delicate,
coloring of his objects inexpressibly true.
torical pieces which he designed were
dmired. He died in 1612.

BATINA, a seed which is thought effica-
extirpating worms from the human body,
h children are chiefly liable. It comes
ersia, and the borders of Russia. It
be chosen plump, of an agreeable scent,
y green: special care must be taken that
r be not dyed, and that the seed of sou-
od be not sold instead of it.

BATULA, in ichthyology, a species of
with six cirri; head unarmed and com-
; the bearded loche of English writers;
opus, &c. Klein; cobitis fluviatilis, Ray;
s, Marsden. It is a native of Europe
a; and is most frequent in fresh-water
, and lakes in mountainous countries.
s habit of lurking at the bottom of the
on the gravel, it has been called the
ing; but the latter name is now more
y given to the spiny loche, a fish distin-
from the present by having a forked
nder each eye, and is that species of cobi-
ch Gmelin calls tænia. This is a fertile
. We are told by Mr. Pennant, that it
ent in a stream near Amesbury in Wilt-
here the sportsmen, through frolic, swal-
lown alive in a glass of wine. It is also
a great abundance in France.

BATUS, in entomology, a species of ce-
(prionus), of a large size that inhabits
America. Also a species of scarabæus,
d, smooth, and black; vent bearded.
ius.) A native of India.

ATUS, in ichthyology, a species of gobius.
ecies of lophius, of a depressed form,
lower jaw bearded. (Montin. act. suec,
Inhabiting the seas in the northern parts
pe.

ATUS, in ornithology, a species of falco,
itish red color, with brown back: the vul-
atus, Linn., and vulturine eagle of Albinus.

ATUS PISCIS, in ichthyology, a name
y Salvian and others, to the Silurus, or
h; the Glanus of Pliny, and the ancients. This Artedi describes under the name of silurus with four cirri at the mouth. By this it is distinguished from the fish called the alkussa, or lake, which, though a genuine species of the silurus, has one beard.

BARBAULD (Anna Letitia), was the daughter of the Rev. John Aikin, of Kibworth, in Leicestershire, and born June 20, 1743. She received from her father, who in the early part of her life presided over a dissenting academy at Warrington, an excellent classisal education, to which she was indebted for the full development of her great natural talents. Her first production was a small volume of miscellaneous poetry, printed in 1772, which in the year following was succeeded by a collection of pieces in prose, published in conjunction with her brother, Dr. John Aikin, of Stoke Newington. She accepted, in 1774, the hand of the Rev. R. Barbauld, with whom she took up her residence at Palgrave in Suffolk, and there composed the work on which her reputation is chiefly founded, viz. Early Lessons and Hymns for Children, pieces of standard merit, in conveying the first rudiments of instruction. In 1785 she accompanied her husband on a tour to the continent, and on their return they resided for several years at Hampstead; in 1802 they again removed to Stoke Newington, in order the more constantly to enjoy her brother's society. In 1812 appeared the last of her publications, entitled Eighteen Hundred and Eleven, a poem; previous to which she had amused herself by selecting and editing a collection of English novels, with critical and biographical notices. A similar selection followed, from the best British Essayists, since the reign of Anne, and another from Richardson's manuscript correspondence, with a memoir and critical essay on his life and writings. Mrs. Barbauld died at Stoke Newington, March 9, 1825, in her eighty-second year.

BARBAZAN, (Stephen) a French author, born at Saint Fargeau, in the diocese of Auxerre, in 1696, and died in 1770. He wrote Instructions from a Father to a Son, 8vo. 1760; but he is chiefly famed as the editor of old French books, particularly Tales and Fables of the twelfth and thirteenth Centuries, 3 vols. 12mo. Few persons were so well acquainted as he was with the antique French language, and he had almost an equal knowledge of the provincial dialects.

BARBE, or BARBETTE, in the military art. To fire in barbe means to fire the cannon over the parapet, instead of firing through the embrasures; in which case the parapet must not be above three feet and a half high.

BARBE, or BARB. See BARB.

BARBE, or BARDE, is an old word, denoting the armour of the horses of the ancient knights and soldiers, who were accoutred at all points. It is said to have been an armour of iron and leather, wherewith the neck, breast, and shoulders of the horse were covered.

BARBE, ST. a town of Biscay in Mexico, near which are rich silver mines, 500 miles north-west of the city of Mexico. Long. 110° 5′ W., lat. 26° 10′ N.

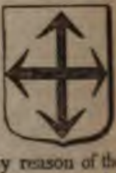
The BARBE, or BARB, of zoology and commerce, brought from Barbary, is a horse much esteemed for its beauty, vigor, and swiftness. It has a long fine neck, not overcharged with hair, well divided from the withers: the head small and beautiful; the ears handsome; the shoulders light and flat; the withers thin and well raised; the back straight and short; the flank and sides round, and the belly not too large. The haunch bones are properly concealed; the crupper is somewhat long, and the tail placed high; the thigh is well formed, and rarely flat; the limbs are fine, handsome, and not hairy; the tendon prominent, and the foot well made; but the pastern is often long. They are of all colors, but generally gray. In their movements they are apt to be careless, and require to be checked. They are swift, nervous, light, and make very fine hunters. These horses are much sought after for improving a breed. They are seldom, however, above four feet eight inches, and never exceed four feet nine inches, or 14½ hands; but they produce foals which grow larger. Those of the kingdom of Morocco are said to be the best, and next to these the barbs from the mountains. The horses from Mauritania are of an inferior quality, as well as those of Turkey, Persia, and Armenia. (Buffon's Nat. Hist. vol. iii. p. 357.) It is a maxim, that barbs grow ripe, but never grow old, because they retain their vigor to the last, which makes them prized for stallions. In Numidia, the race of horses is much degenerated. The Tingitanians and Egyptians have had the reputation of preserving the best breed. Some of these are sixteen hands high, and all of them shaped, according to their phrase, like the antelope. The good qualities of a Barbary horse, besides the supposed one of never lying down, and of standing still when the rider drops his bridle, are to have a long walk, and to stop short, if required, in full career. The barb is very lazy and negligent in his general motions; he will stumble in walking upon the smoothest ground; his trot is like that of a cow, and his gallop very low, very easy to himself. This sort of horse, however, is for the most part sinewy, nervous, and excellently winded; it is therefore good for a course, if not overweighted. The mountain barbs, which are the largest and strongest, are much esteemed: common barbs have been usually bought in Provence and Languedoc in France, at a moderate price; and many of our persons of fashion in England have them from thence. Barbs, amongst us, fall short of the swiftness attributed to them in their native country; this may be accounted for, partly from the smallness and lightness of their riders, and partly from their not being loaded with heavy saddles and bridles, as in Europe, nor even with shoes. An Arab saddle is only a cloth girt round with a pair of light stirrups, and a sort of pummel to sustain them.

Bastard-Barbs, are those descending from English mares, covered by barb stallions, and who are, by experience, found both better shaped, stronger, and fitter for the saddle, than their sires. Phil. Trans. No. 105.

BARBEAU de la Bruyere (John Lewis), a celebrated French chronologer, born at Paris in 1710. He published an historic map of the world, in which geography, chronology, and history, are combined in one view; and an edition, a great part of which he compiled, of the Abbé Lenglet's Chronological Tables; also, La Croix's Modern Geography, and the two last volumes of Bibliotheque de France. Besides which, he translated into French, Strahlenberg's Description of Russia, &c. He died in 1781.

Barbeau, a river of Canada, which runs into the Utawas. Long. 76° 55′ W., lat. 45° 5′ N.

Barbed, in heraldry, the five petals or leaves which appear on the outside of a full blown rose are called barbs; and are thus emblazoned: a rose gules barbed and seeded proper, the rose is red, the barbs green, and the seeds yellow or gray. A barbed arrow, signifies an arrow whose head is pointed of an angular form, and jagged. A barbed horse is a horse barbed at all points, that is, a war-horse completely armed, furnished, and accoutred.



Barbed Cross, in heraldry, a cross, the extremities whereof are like the barbed irons used for striking fish.

BAR'BEL. A fish so called by reason of the *barb*, or wattels, at his mouth, which are under his nose or chaps, so says old Izaak Walton. It is the vulgar name of the cyprinus barbus, which cost the fisherman so dear, when he presented it to the gloomy and savage Tiberius, at Capræa.

> The lavish slave
> Six thousand pieces for a *barbel* gave;
> A sesterce for each pound it weigh'd, as they
> Gave out, that hear great things, but greater say.
> *Duke*

Barbel, in heraldry, is understood of a cock, when his comb and wattles are of a different color from the rest of the body; in which case he is said to be barbed and crested.

Barbel, in ichthyology. See Cyprinus.

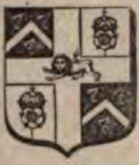
BARBELA, or Verbela, the branch of the Zaire or Congo which comes from the south, and is considered by the Portuguese geographers as the principal one. It is said to take its rise in the kingdom of Matamba.

BARBELICOTÆ, an ancient sect of Gnostics, spoken of by Theodoret. Their doctrine was, that one of the Æons, possessed of immortality, had commerce with a virgin spirit named Barbeloth, who demanded of him, first prescience, then incorruptibility, and lastly eternal life; all which were granted to her: that being one day in a gayer humor than ordinary, she conceived and afterwards brought forth light, which being perfected by the unction of the spirit, was called Christ: the child Christ desired to have understanding, νυν, and obtained it; after which, understanding, reason, incorruptibility, and Christ united together; and from their union arose autogenes αυτογενης. To these fables, they add divers others. They were also denominated Barbariani.

BARBELOTH. See the last article.

BARBER-Chirurgeons anciently had a lute, viol, or some other musical instrument, as part of the furniture of their shops, which were frequented by persons above the ordinary level, who resorted to the barber either for the cure of wounds, or to undergo some chirurgical operations, or, as it was then called, to be trimmed a word that signified either shaving or cutting and curling the hair; these, together with letting blood, were the ancient occupations of the barber-surgeons. As to the other important branch of surgery, the setting of fractured limbs, that was practised by another class, called bone-setters, of whom there are hardly any now remaining. The musical instruments in their shops were for the entertainment of waiting customers; and answered the end of a newspaper, with which those who now wait for their turn at the barber's amuse themselves.

BARBER, CHIRURGEONS, in heraldry, were incorporated by king Edward IV., but the barbers were separated from the surgeons by 18 Geo. 2, c. 15. Their arms are, 'A St. George's cross *gules*; thereon a lion passant gardant, *or* quarterly; the first and fourth a chevron between three fleams; the second and third per *pale argent* and *vert*, a rose, *gules*, crowned, and seeded *or*.



BARBERS OF EDINBURGH were formerly united in one incorporation with the surgeons; but about the year 1720, some disputes arising about precedency, a process commenced before the Court of Session, which ended in a total separation of these two bodies; and the surgeons were found entitled to retain the charter and privileges of the incorporation. The barbers have ever since met as a regular, but unincorporated society; and though they retain some of their former privileges, such as their preses being one of the governors of the Trades Maiden Hospital, &c. they have no representative in the town council, nor even the shadow of a vote in the election of a member of parliament. Mr. Creech, in his Statistical Account of Edinburgh, records a revolution of a different nature in that society, which affords an instance of the rapid progress of refinement, or, as a philosopher would express it, the rapid increase of luxury, in the metropolis of Scotland. 'In 1763,' he says, 'there was no such profession known as a perfumer; barbers and wigmakers were numerous, and were in the order of descent burgesses: hairdressers were few, and hardly permitted to dress hair on Sundays; and many of them voluntarily declined it. In 1783 perfumers had splendid shops in every principal street: Some of them advertised the keeping of bears, to kill occasionally, for greasing ladies' and gentlemens' hair, as superior to any other animal fat. Hairdressers were more than tripled in number; and their busiest day was on Sunday. There was a professor who advertised a hair-dressing academy, and gave lectures on that noble and useful art.'

BARBER'S POLE. See APPELLATION.

BARBERINO (Francis), one of the most excellent poets of his age, was born at Barberino, in Tuscany, A. D. 1264. As his mother was of Florence, he settled in that city; where his profession of the law, but especially the beauty of his poetry, raised him a very considerable character. The greatest part of his works are lost; but his 'Precepts of Love, a moral poem, calculated to instruct all who have a regard for glory, virtue and eternity,' has had a better fate. It was published at Rome, adorned with beautiful figures, in 1640, by Frederick Ubaldini; who prefixed the author's life; and, as there are in the poem many words which are grown obsolete, he added a glossary to explain them, which illustrates the sense by the authority of contemporary poets.

BARBERINO, a town of Italy, in Tuscany, situated at the foot of the Appenine mountains, twelve miles south of Florence.

BARBERRY, in botany. See BERBERIS.

BARBERSTOWN, a town of Ireland, in the county of Kildare, Leinster, twenty-three miles from Dublin.

BARBESULA, in ancient geography, 1. a town, and 2. a river, of Bætica; 3. a colony in the resort of the Conventus Gaditanus in Spain: now Marbella, in Grenada.

BARBET, in natural history, a name given by M. Reaumur, and other of the French writers, to a peculiar species of the worms which feed on the pucerons or aphides. See APHIS.

BARBET, in zoology. Buffon calls the water-dog of Pennant, canis aquaticus of Gmelin, &c. le grand barbet; and canis minor Gmel. le petit barbet. Hist. Nat.

BARBET, in ornithology, the English name of a genus of birds in Latham's Synopsis, corresponding with that of bucco, Linn. See BUCCO.

BARBETS, the name of the inhabitants of several valleys in Piedmont, particularly those of Lucern, Angrona, Perusa, and St. Martin.

BARBEYRAC (Charles), an eminent physician, born at Cereste, in Provence, in 1629. He studied at Montpelier, and afterwards settled there. The celebrated Locke, with whom he was in friendship, compared him to Sydenham. He died in 1699. He was author of Traités nouveau de Medicine, &c. 12mo. 1654; and Questiones Medicæ Duodecim, 4to. 1658.

BARBEYRAC (John), was born at Besiers, in Lower Languedoc, in 1674. He was made professor of law and history at Lausanne in 1710, which he enjoyed for seven years. In 1717 he was professor of public and private law at Groningen. He translated into French, Puffendorf's Law of Nature and Nations, and his Duties of a Man and a Citizen; to both which he wrote excellent notes, and to the former an introductory preface. He translated also Grotius's treatise De Jure Belli ac Pacis, with large and excellent notes; and several of Tillotson's sermons. He wrote a work entitled Traité de Jeu, 2 vols. 8vo.

BARBEZIEUX, a town of France, in the province of Saintonge, with 2452 inhabitants, and the title of marquisate. It is the capital of an arrondissement of six cantons, in the department of the Charente. Here are thriving linen manufactures; and in the neighbourhood there is a mineral spring. Twenty-eight miles south-east of Saintes, and forty-four north-east of Bourdeaux. Long. 0° 4′ W., lat. 45° 28′ N.

BARBI, in natural history, a species of echinorhynchus, of an ovate shape, yellow color, fasciated; neck long, white, cylindrical; and cyathiform (glass or pot-shaped) at the end, found in the intestine of the barbel.

BARBICAN. See BARBACAN.

BARBICAN, in ornithology, the name of the Gmelinian bucco dubius, or doubtful barbet, in

Buffon's Hist. Birds Barbu is also a name given by that writer to all the birds of the bucco genus, which he describes.

BARBICANAGE, or BARBICANAGIUM, in our old writers, money given for the maintenance of a barbican, or watch tower; or a tribute towards repairing or building a bulwark.

BARBICON (BARBICON DE CAYENNE), in ornithology, the name of the Muscicapa barbata of Gmelin, in Buffon's History of Birds.

BARBICORNIS, in entomology, a species of brentus that inhabits New Zealand, the curculio barbicornis of Fabricius. 2. A species of cerambyx. 3. A species of cimex (reduvius), of Sierra Leone. 4. A species of tipula.

BARBIER (M.), an English singer, who appeared on the revival of the opera of Almahide, in 1711. Her timidity on this occasion gave birth to an admirable Spectator (No. 131), in which Addison apologises for and commends her diffidence and modesty. This lady was a native of England, who continued to sing at the opera several years, and afterwards was a favorite concert and playhouse singer till the year 1729. In 1717 it seems she had somewhat vanquished her bashfulness in private. Her elopement from her father's house gave occasion to the following elegant lines by Hughes :—

All, who in town or country dwell,
Say, can you tale or tidings tell
Of Tortorella's hasty flight?
Why in new groves she takes delight ;
And if in concert, or alone,
The cooing murmurer makes her moan?
Now learn the marks, by which you may
Trace out and stop the lovely stray.
Some wit, more folly, and no care,
Thoughtless her conduct, free her air;
Gay, scornful, sober, indiscreet,
In whom all contradictions meet,
Civil, affronting, peevish, easy,
Form'd both to charm you and displease you;
Much want of judgment, none of pride,
Modish her dress, her hoop full wide ;
Brown skin, her eyes of sable hue,
Angel when pleased, when vexed a shrew.
Genteel her motion when she walks,
Sweetly she sings, and loudly talks ;
Knows all the world, and its affairs,
Who goes to court, to plays, to prayers,
Who keeps, who marries, fails or thrives,
Lead honest or dishonest lives ;
What money match'd each youth or maid,
And who was at each masquerade ;
Of all fine things in this fine town,
She's only to herself unknown.
By this description, if you meet her,
With lowly bows, and homage greet her!
And if you bring the vagrant beauty
Back to her mother and her duty,
Ask for reward a lover's bliss,
And, if she'll let you, take a kiss ;
Or more, if more you wish, and may,
Try if at church the words she'll say,
Then make her, if you can—obey.

BARBIERI (Giovanni Francesco), otherwise called Guercino da Cento, an eminent historical painter, was born at Cento, near Bologna, in 1590. He was the disciple of Benedetto Gennari, but afterwards studied in the school of the Caracci, though he did not adopt the manner of that famous academy. He preferred the style of Caravaggio to that of Guido or Albano, imagining it impossible to imitate nature truly, without the assistance of strong lights and strong shadows. In effect, by this opposition, he gave such force to his pictures, that few, except those of Caravaggio, can stand near them, and not seem feeble in their effect; however, his manner is censured as not being like nature, because it makes objects appear as if they were seen by a candle-light, or a sun-beam, which alone can justify the deepness of his shadowing. His princpal attention seems to have been fixed on perfection in coloring; he saw the astonishing effects produced by the coloring of the celebrated Venetian masters ; and observed that notwithstanding any imperfection in regard to correctness or elegance, their works were the objects of universal admiration. On this account he devoted his whole study to excel in coloring; being convinced that few are qualified to discern the elevation of thought which constitutes the excellence of a composition; that few are touched with the grandeur or beauty of the design, or have a capacity to examine the correctness of a painting; but that every imperfect judge may be sensibly affected by the beauty of the coloring. His taste of design was natural, easy, and often grand, but without any extraordinary share of correctness or elegance. The airs of his heads are often deficient in dignity, and his local colors want truth. However, there is great harmony in his colors, although his carnations are not very fresh ; and in all his works there is an expressive imitation of life, which will always render them estimable. Towards the decline of his life, he observed that the clearer and brighter style of Guido and Albano had attracted the admiration of all Europe; and therefore he altered his manner, even against his own judgment. But he apologised for that conduct, by declaring that in his former time he painted for fame, and to please the judicious ; and he now painted to please the ignorant, and enrich himself. He died in 1666. The most capital performance of Barbieri is the history of St. Petronilla which is considered as one of the ornaments of St. Peter's, at Rome.

BARBIERI (Paolo Antonio, da Cento), painter of still life and animals, was the brother of Giovanni, and born at Cento in 1596. He chose for his subjects, fruit, flowers, insects, and animals: which he painted after nature, with a lively tint of color, great tenderness of pencil, and a strong character of truth and life. He died in 1640.

BARBIGEROUS, bearded.

BARBILLONS, in entomology, are certain bodies, usually two in number, placed under the head of an insect, and movable at pleasure, somewhat resembling hands or fingers placed on a short or broken arm. The word is a diminutive of the French barbe, the beard.

BARBING, is sometimes used in ancient statutes for shearing. Cloth is not to be exported till it be barbed, rowed, and shorn. 3 Hen. VII. c. 11.

BARBISTON, an ancient castle in the parish of Dalrymple, in Ayrshire, near which a battle was fought. The dates of 1340 and 1345, are on some stones in the old vaults.

BARBITOS, or Barbiton, an ancient instrument of music, mounted with three strings; others say seven, much used by Sappho and Alcæus; whence it is also denominated lesboum. It is said to have differed from the lyre and cithara. Strabo makes it the same with the sambuca. It is represented as yielding a grave, deep, sound, and on that account peculiarly fitted for Doric compositions. Anacreon is said to have been the inventor.

BARBLE, or Barbel, in ichthyology. See Cyprinus.

BARBLES, Barbes, or Barbs, in farriery, the knots or superfluous flesh that grow up in the channels of a horse's mouth; that is, in the intervals that separate the bars, and lie under the tongue. These obtain in black cattle as well as horses, and obstruct their eating. For the cure, they cast the beast, draw out his tongue, and clip off the barbles with a pair of scissars, or cut them with a sharp knife; others burn them off with a hot iron.

BARBO, a river of Mexico, which rises in the province of Honduras, and runs into the Spanish Main, forty miles south-east of Cape Camaron.

BARBONI, in ichthyology, a name given to the mullus barbatus, a fish greatly esteemed at table, and caught in the Mediterranean and some other seas.

BARBONNE, a town of France, in the department of the Marne, five miles from Sezanne.

BARBORA, a maritime town of Africa, in the kingdom of Adel.

BARBOUR (John), archdeacon of Aberdeen, was esteemed an elegant poet in the reign of David I. He wrote the history of Robert the Bruce, in an heroic poem, which is still extant, and contains many facts and anecdotes omitted by other historians. An edition of this book was printed at Glasgow, 8vo, in 1762: entitled The Acts and Life of the most victorious conqueror Robert Bruce, king of Scotland, wherein also are contained the martial deeds of the valiant princes Edward Bruce, Sir James Douglass, Earl Thomas Randall, Walter Steward, and sundry others. In one passage he calls it a romance; but that word was then of good reputation. The Romaunt of romaunts has been applied to true history; as well as the Ballad of ballads to a sacred song. Mr. Pinkerton published an edition in 1790, from an ancient MS.

BARBUD, a Persian musician in the service of Kosru Parviz, whose name was afterwards adopted to signify the master of music. Barbud is also the name of a sort of lyre in use among the Persians.

BARBUDA, or Berbuda, one of the British Carribee islands, about twenty miles long, and twelve broad. It is low land, but fruitful and pretty populous, abounding in cattle and fruits, especially in cocoa trees, which are here extremely fine. It also yields cotton, pepper, tobacco, indigo, ginger, and sugar-cane, besides fine woods, herbs, and roots, with which it is plentifully stocked. Several species of snakes are found in this island, some of which are harmless, while others are exceedingly venemous. Amongst the latter is one having a flat head, whose bite occasions instant death. The island has no harbour, but a well sheltered road on the west side. The inhabitants are about 1500, and follow husbandry, finding always a ready market for their corn and cattle in the sugar islands. Barbuda is the property of the Codrington family, who have great numbers of negroes here, as well as in Barbadoes. That family have one merit which few slave-holders can lay claim to: they have given large benefactions to instruct their slaves in Christianity. Barbuda lies about twenty miles north-east of St. Christopher's, and forty-five north of Antigua. Long. 61° 50′ W., lat. 18° 30′ N.

BARBUE, a river of North America, in the north-western territory, which runs west by north, and falls into the Lake of Michigan. It is about 150 yards broad at the mouth.

BARBULÆ in botany, a name given by Pliny to the semi-flosculi.

BARBURY Castle, and Barbury Hill, places in Wiltshire, west of Ogborn St. George, and near Marlborough Downs. There formerly stood here a castle of considerable magnitude, surrounded by a double moat; and on the adjacent plain are many barrows, which seem to indicate that a great battle was fought on this spot, at some remote period.

Barby, a county in the Prussian states on the Elbe, between Magdeburg and Anhalt, consisting of the bailiwics of Barby, Rosenburg, Walther-Nienburg, and Muhlingen. On the death of the last of the counts in 1659, Barby Proper came to the elector of Saxony, and after forming part of Jerome Buonaparte's kingdom of Westphalia, was annexed to Prussia in 1815.

Barby, the chief town is situated on the Elbe, near where it receives the Saale, and has 2900 inhabitants. It is well built, has an old castle, and is the seat of the superintendant of eight churches in the county. The Moravian brethren obtained permission in 1749 to remove hither their academy and theological seminary, and they founded an academical college in 1754. They had here also a school and chapel, an observatory, and a cabinet of natural history; but the greater number of these establishments have been transferred to Niesky, in Upper Lusatia. Fourteen miles north-west of Dessau, and fourteen S. S. E. of Magdeburg. Long. 11° 58′ 47″ E., lat. 51° 59′ N.

BARBYLA, in botany, a name by which Theocritus and other of the early writers, have called the common damask prune.

BARCA, a large country of Africa, lying on the coast of the Mediterranean sea, between the kingdoms of Egypt and Tripoli, extending in length from east to west from 39° to 46° E. long., and in breadth from north to south about thirty leagues, as is generally supposed. It is for the most part, especially in the middle, a dry sandy desert; on which account the Arabs call it Sahart, or Ceyart Barka, that is, the desert or road of whirlwinds or hurricanes. It labors almost everywhere under a great scarcity of water; and except in the neighbourhood of towns and villages, where the ground produces some small quantities of grain, such as millet, and some maize, the rest is in a manner quite barren and uncultivated, or rather uncultivable: and even of that small quantity which those few spots produce, the poor inhabitants are obliged to exchange some part with their indigent neighbours, for dates, sheep, and camels, which they stand in greater need of than they, by reason of their great scarcity of grass and other proper food; for want of which, those that are brought to them, seldom thrive or live long. In this territory stood the famed temple of Jupiter Ammon: and notwithstanding the pleasantness of the spot where it stood, this part of the country is said to have been the most dangerous of any, being surrounded with such quick and burning sands as are very detrimental to travellers; not only as their feet sink into them, but being light and heated by the rays of the sun, they are easily raised by every breath of wind; which, if it chance to be in their faces, almost burns their eyes out, and stifles them for want of breath; or, if vehement, often overwhelms whole caravans. Against this temple Cambyses, king of Persia, despatched an army of 50,000 men. They set out from Thebes, in Upper Egypt, and under the conduct of proper guides, reached the city of Oasis, seven days journey from that place: but what was their fate afterwards is uncertain; for they never returned either to Egypt or to their own country. The Ammonians informed Herodotus, that, after the army had entered the sandy desert which lies beyond Oasis, a violent wind began to blow from the south at the time of their dinner, and raised the sand to such a degree, that the whole army was overwhelmed and buried alive. Concerning the government or commerce of this country we know nothing certain. The maritime towns are under the nominal protection of the Porte, and the whole country is subject to Tripoli, the bashaw of which appoints a sangiack, who resides at Derne, the capital of Barca.

BARCA, a sea-port town in the territory of the same name. Long. 20° 25′ E., lat. 32° 26′ N.

BARCALAO, a Spanish word, which the French pronounce baccala, or baccaliau. By this last name the Basques most commonly call the fish which we style cod; and those people call also the island which we call Newfoundland, the isle of Baccalian, cod island, because of the great plenty of cod caught there.

BARCALON, an appellation given to the prime minister of the king of Siam, who superintends every thing relating to commerce, both foreign and domestic, as well as the king's magazines.

BARCA-LONGA, a large Spanish fishing-boat, navigated with lug-sails, and having two or three masts, very common in the Mediterranean.

BARCALORE, a town of Cochin, twenty-two miles east of Cranganore.

BARCANS, the natives of BARCA, which see.

BARCARIA, old law Lat, a barkery or tan-house.

BARCARY, bergerie, Fr. a sheep-cote.

BARCAS, a town of New Mexico, in the intendancy of Guadalaxara, which has a numerous population of Spaniards, Mestizoes, and Mulattoes.

BARCATTY, a town of Cochin, on the confines of Dindigul, sixty miles east of Cochin.

BARCE, the chief city in the province of Barca, about nine miles from the sea. It was founded by the brothers of Arcesilaus, king of Cyrene, 515 years before the Christian era.

BARCELONA, a handsome, rich, and strong city of Spain, in the province of Catalonia, of which it is the capital. It is situated by the sea side, of a form between a square and an oval; surrounded with a good brick wall, round which is another, with fourteen bastions, horn-works, ramparts, and ditches; the ramparts are high, broad and spacious. This city, which is reckoned the second in Spain in population, is divided into two parts, the Old and the New, separated from each other by a wall and a large ditch; the streets are handsome, well paved with large stones, wide, and very clean. It is a bishop's see, the seat of a captain-general, a governor, and a royal audiencia; and here the archives of the kingdom of Arragon are preserved.

The Barcelonians have also a fine university, and various institutions for the promotion of literature, arts and sciences; the academies for jurisprudence, natural philosophy, medicine, history, and the fine arts, are celebrated throughout Spain. The most remarkable buildings are the cathedral, which is adorned with two high towers; the church of the Virgin Mary, the palace of the bishop, that of the inquisition, and several religious houses; add to these the palace of the viceroy, the arsenal, which contains arms for 1000 men, and a cannon-foundry, the exchange, where the merchants meet, the tersana, where they build the galleys, and the palace where the nobility of the country meet, called La Casa de la Deputation. This last is built with fine large free stone, and adorned with columns of marble: there is in it a large hall, with a handsome portico. There are several fine squares, particularly that of St. Michael, into which all the great streets run.

This city was originally founded by Hamilcar Barcas, and from him called Barcino. It was reduced by the Romans, and continued subject to them till Spain was over-run by the Goths and Vandals. In the beginning of the ninth century Barcelona was in the hands of the Saracens, under the government of one Zade. The government having more than once abused the clemency of Charlemagne, at last irritated Louis king of Aquitain, his son, to such a degree, that he gave orders to his generals to invest the city, and not to rise from before it till they had put Zade into his hands. Zade made a most obstinate resistance, so that the siege lasted many months; at last, finding it impossible to preserve the city much longer, and being destitute of all hopes of relief, he determined, or rather was compelled by the inhabitants, to go to the Christian camp and implore the emperor's mercy; and being sent prisoner to Charlemagne, he was condemned to perpetual banishment. The people gaining nothing by this expedient, continued to hold out for six weeks longer, when Louis himself took the command of the siege. To him they made a proposal, that if he would allow them to go where they pleased, they would surrender. Louis, having agreed to this, made his public entry into Barcelona, where he formed a design of extending his father's dominions as far as the Ebro; but being recalled before he could put his design in execution, he appointed one Bera, count of Barcelona. The city continued bject to him and his successors, who enjoyed e title of counts of Barcelona, from A. D. 802 1131; during which time nothing remarkable curred, except that the city was once taken by e Moors, but soon after retaken by the assist- ce of Louis IV. king of France. In 1131 it is united to the crown of Arragon by the mar- ge of Raymond V. count of Barcelona with e daughter of Ramiro the monk, king of Arra- n. In 1465 the Catalonians revolted against hn II. king of Arragon, out of hatred to the een Donna Joanna; the consequence of which is, that Barcelona was besieged by that monarch 1471. Various efforts were made by Louis I. of France and the duke of Lorraine to raise e siege, but without effect. Things at length re brought to the utmost extremity, when the ng offered to pardon them all, without the allest punishment either in person or property, ovided they would submit; but these terms ey rejected, chiefly through the influence of the unt de Pailhars, who had been pardoned the ar before. The army on the other hand, was ry earnest in being led on to the assault, in pes of plunder. The king, however, wrote a tter to the citizens, dated the 6th of October, in rms as affectionate as if he had been writing to s children, bewailing the miseries they had ought on themselves, and concluding with a rotestation that they, and not he, must be swerable for the consequences. Upon this, hey sent deputies to the king, and made a capi- ulation on the 17th of that month. In this the king acknowledged they had taken up arms on just motives; and forgave everybody except Pailhars, who was, however, suffered to escape. On the 22nd of October the king made his entry into the city, and confirmed all their ancient privileges. In 1697 Barcelona was taken by the French, after a bloody siege of fifty-two days; and the loss of this city had a considerable effect in disposing the Spaniards to agree to the treaty of Ryswick. In queen Anne's time it was taken by the allies, under the earl of Peterborough, Oct. 4, 1705; but, being afterwards shamefully denied assistance by the English ministry, was bliged to submit to Philip V. by whom the hole province was deprived of its ancient pri- ileges, in 1714; for a particular account of hich, see SPAIN.

The port of Barcelona is wide, spacious, deep, d safe; defended on the one side by a great ole, and on the other sheltered from the west nd by two mountains that advance into the sea, d form a kind of promontory; the mole is 750 ces long, with a quay, at the end of which is ight house and a small fort. One of the moun- ns, called Montjoui or Mount Joy, is very gh, and rises in the middle of the plain near city: it is covered with gardens, vineyards, oves of trees, and has a strong fort for the fence of the city; this mountain being a rock, lds an inexhaustible quarry of fine hard free- ne. Barcelona is a place of great trade. The mber of ships which arrived here in 1803, fore its commerce was impeded by the penin- lar war, has been stated at 1333, 927 of which re Spanish, and the remainder belonged to her nations. The manufacturing establish- ents are calico presses, looms for silk, wool, and cotton, hats, laces, ribbons, stockings, and soap. Here, also, are fabricated excellent muskets, pistols, swords, and other small arms, not only for the army at home, but for Naples and America. There are, besides, several steel and brass works. It has, also, a good trade in linen, copper, and brass, from Germany. Another extensive article of its trade is salt fish, from Newfoundland, the chief trade for which is with England.

When the trade with Mexico was first opened, in 1778, the Barcelonese merchants soon distinguished themselves by successful enterprises in it. Twenty-three ships, whose cargoes of Spanish produce was valued at £85,000 English, and the foreign freight at £25,000, cleared out here the first year. In ten years after, the goods thus exported amounted to £400,000, and the return cargoes to £450,000. The present export and import trade are taken together at £1,750,000, and the population at about 112,000.

At Barcelona Charles III., of the house of Bourbon, landed from Naples in 1759, to take possession of the throne of Spain. On the 16th February, 1808, it was surprised by a body of French troops under general Duhesme. They arrived in the neighbouhood on the 13th of February to the number of 10,000; and, having requested permission to halt and refresh themselves on their way to Valencia, the gates were opened to receive them, and they were hailed as friends and allies. On the 16th, having assembled on the parade, as if for the purpose of continuing their march, they filed off in two divisions, one to the citadel, the other to Monjui, a fort upon a hill which commands the town, and having summoned those posts, they were immediately surrendered. Barcelona continued in possession of the French until the year 1814.

BARCELONA, one of the principal provinces of the government of Cumana, South America: bounded on the west by Cumana, east by the Caraccas, and south by the river Orinoco, which also divides it from Guiana. Here commence those immense plains, covered with excellent pasturage, which, uniting with those of the Caraccas, extend as far south as the Orinoco. They were formerly well stocked with cattle, 8000 or 9000 head being killed annually, in salting of which the inhabitants exhibited great skill. In the province are four remarkable salt-pits; but of late the supply is much diminished. This province declared its independence in 1811, and is now a part of the republic of Columbia.

BARCELONA NEW, the capital of the foregoing province, is situate in a plain on the left bank of the river Neveri, half a league distant from the sea, in 10° 10′ N. lat. and 64° 47′ W. long. It is twelve leagues from Cumana in a direct line; but the windings which it is necessary to make to avoid bad roads, make it a journey of twenty hours. It is reckoned ten marine leagues by sea from the port of Barcelona to that of Cumana.

On ascending on the east side of the river, about four miles from its mouth, we observe, on an eminence which bears the name of the city, a fort erected for the protection of vessels which anchor not far from it, in a bay so shallow as not to be capable of admitting veesels of considerable size. This port, if it may be so called, affords no shelter but against the breeze: but at the distance of one league to the north, the island of Borracha, inhabited by fishermen, presents, on its south side, a safe harbour for ships of the largest size. From the hill of Barcelona, the coast runs to the north-east, as far as Cumana, which is at the distance of two leagues. That space is filled with a chain of islands, not far removed from the coast. Some of these are provided with bays and ports; but they are of no great consequence.

Barcelona has a population of fourteen thousand souls, a single parish church, and an hospital for the Franciscans who support the missions of this part. It is neither handsomely nor agreeably constructed. Its unpaved streets are extremely muddy in rainy weather; and in dry seasons they are covered with a dust so light that the least breath raises it in the air. The immense quantity of hogs fed there, induce in the city a number of stinking and infectious sties, which corrupt the air and frequently create diseases. In 1803, however, the commandant of the place took measures for removing from the town an infection which could not but poison its residence. This town had, in 1807, a population of 15,000 persons; half whites and half mulattoes and negroes.

Hides, tallow, oxen, mules, jirked and salted beef, are the great articles of trade here; in 1800 eight thousand mules left this port for the West India islands. The annual value of the trade is computed at 400,000 dollars.

BARCELONETTA, a small and new town of Spain, in Catalonia, a suburb of Barcelona. It stands on the south-east of that city, between the harbour and the light-house, and was built by the marquis de la Mina, then captain-general of Catalonia, about the middle of the last century. In consists of a square, laid out in twenty-four streets, composed of brick houses, all built upon the same plan, which gives it a neat appearance. The number of houses is stated at 600, and that of the inhabitants at 10,000, the major part of whom are soldiers, sailors, and persons otherwise connected with the navy. The church is a handsome structure, in the form of a Greek cross.

BARCELONNE, a town of France, in the department of the Gers, arrondissement of Mirande, on the river Adour. Population 840. Nine miles south-west of Nogaro, twenty-seven W. N. W. of Mirande.

Barcelonne, a small town of France, in the department of the Drome, arrondissement of Valence, five miles east of Valence.

Barcelonnette, a town of France, in the department of the Lower Alps, and capital of the province and valley of this name.

The arrondissement contains above 18,000 inhabitants, in four cantons. Population of the town 1900. The only objects of trade are corn and cattle, particularly sheep. Near this place is a passage across the Alps to Coni; and the district was the scene of various military operations in the campaign of 1799. Twenty-eight miles north-east of Digne, twelve miles south-east of Embrun, and fifty-six north-west of Nice. Long. 6° 44′ E., lat. 44° 23′ N.

BARCELORE, a town of Hindostan, in Canara, on the banks of a broad river, about four miles from the sea. It once belonged to the Portuguese, from whom it was captured by the Dutch, who immediately began to establish a settlement here. It was formerly the capital of an independent state, which in 1575 was ruled by a female sovereign, and the daughters of the family have since succeeded. Barcelore carries on considerable trade with the Arabs of Maskat, exporting rice, the chief product of the country, and pepper, and receiving horses and dates in return. This port is supposed to have been the Barace of the ancients. Long. 74° 46′ E., lat. 13° 45′ N.

BARCELOS, a town of Portugal, in Entre Duero-e-Minho, ten miles west of Braga, and twenty north of Porto, seated on the river Sourilla.

Barcelos, a town of Portugal, with the title of a duchy, seated on the river Cavado, over which there is a handsome bridge.

BARCES, or Berches, were formerly a kind of ship guns, not unlike sakers, only shorter, thicker in metal, and wider bored.

BARCINO, in ancient geography, a town of the Tarraconensis in Spain, and capital of the Laletani; now called Barcelona.

BARCLAY (Alexander), a learned monk in the reign of Henry VIII. Where he was born, has been subject of contention among his biographers. Bale, his contemporary, says he was born in Somersetshire. There is indeed a village of his name, and a numerous family, in that county. Pits thinks he was born in Devonshire. Mackenzie is positive he was a Scotchman; but without proof, unless we admit as such his name Alexander. He was, however, educated at Oriel College, Oxford. Afterwards he went abroad, and continued some time in France, Italy, and Germany, where he acquired a competent knowledge of the languages of those countries. On his return to England he was made chaplain to his patron the bishop of Tyre, who appointed him a priest of St. Mary, at Ottery College in Devonshire. After the bishop's death he became a Benedictine monk of Ely. On the dissolution of that monastery he obtained a vicarage in Somersetshire; and, in 1549, being D. D., was presented to that of Great Baddow in Essex. In 1552 he was appointed rector of Allhallows, which he enjoyed but a short time; for he died at Croydon in June following. He improved the English language, and was one of of the politest writers of his time. He composed several original works; but was chiefly remarkable for his translations from the Latin, Italian, French, and German languages. His version of Sallust's Jugurthine war is accurate, and even elegant. His lives of several saints, in heroic verse, are still in MS. His Stultifera Navis, or The ship of fools, is the most singular of his performances. It was printed by Richard Pynson at London, 1509, in folio; and contains a variety of wooden plates, which are worthy the inspection of the curious.

Barclay (John), son of William, was born in France, at Pont-a-Mousson, and was so great favorite of the Jesuits, that they used all their efforts to engage him in their society. But his father prevented this, and carried him with him to England. Previously to this young John had already commenced author, for he had published A Commentary upon the Thebais of Statius, a Latin poem on the coronation of King James, and the first part of Euphormio, in 1603. He returned to France with his father in 1604; and after his death went to Paris, but returned soon after to London, where he was in 1606. He published The History of the Gunpowder Plot, a pamphlet of six leaves, printed at Amsterdam. He published at London in 1610, An Apology for the Euphormio, and his father's treatise De Potestate Papæ. And at Paris, in 1612, he published a book entitled Pietas, in answer to Cardinal Bellarmin, who had written against his father's book, on the power of the Pope. Two years after he published Icon Animorum. He was invited to Rome by Pope Paul V. and received a great deal of civility from Cardinal Bellarmin, though he had written against him. He died at Rome in 1621, while his Argenis was printing at Paris. This celebrated work has since gone through a great number of editions, and has been translated into most languages. M. de Peiresc, who had the care of the first edition, caused the effigies of the author to be placed before the book; and the following distich, written by Grotius, was put under it:

Gente Caledonius, Gallus natalibus, hic est,
Romam Romano qui docet ore loqui.

Barclay (Robert), one of the most eminent among the Quakers, the son of Colonel David Barclay, descended of an ancient family, was born at Edinburgh in 1648. He was educated under an uncle, who was principal of the Scots' college at Paris, where the Papists used all their efforts to draw him over to their religion. He joined the Quakers in 1669, and distinguished himself by his zeal and abilities in defence of their doctrines. His first treatise in their defence was published at Aberdeen in 1670. His father the colonel had joined them in 1666. In 1676 he published in Latin at Amsterdam his Apology for the Quakers; which is the most celebrated of his works, and esteemed the standard of the doctrine of the Quakers. His Theses Theologicæ, which were the foundation of this work, and addressed to the clergy of what sort soever, were published before the writing of the Apology, and printed in Latin, French, High Dutch, Low Dutch, and English. He translated his apology into English, and published it in 1678, with a dedication to king Charles II. which is remarkable for the uncommon frankness and simplicity with which it is written. Amongst many other extraordinary passages, we meet with the following: 'There is no king in the world, who can so experimentally testify of God's providence and goodness; neither is there any who rules so many free people, so many true christians; which thing renders thy government more honorable, thyself more considerable, than the accession of many nations filled with slavish and superstitious souls. Thou hast tasted of prosperity and adversity; thou knowest what it is to be banished thy native country, to be overruled as well as to rule and sit upon the throne; and being oppressed, thou hast reason to know how hateful the oppressor is both to God and man: if, after all those warnings and advertisements, thou dost not turn unto the Lord with all thy heart, but forget him who remembered thee in thy distress, and give up thyself to follow lust and vanity, surely great will be thy condemnation.' He travelled with the famous William Penn through the greatest part of England, Holland, and Germany, and was everywhere received with the highest respect; for though both his conversation and behaviour were suitable to his principles, yet there was such liveliness and spirit in his discourse, and such serenity and cheerfulness in his deportment, as rendered him extremely agreeable to all sorts of people. He returned to his native country, spent the remainder of his life in a quiet and retired manner; and died at his house at Urie, on the 3rd of October 1690, aged forty-two. He wrote other works; particularly, 1. A Treatise on Universal Love. 2. The Anarchy of the Ranters; a turbulent sect with whom the enemies of the Quakers endeavoured to confound them. 3. A Letter to the Ministers of Nimeguen. 4. The Possibility and Necessity of the Inward Revelation of the Spirit of God, &c. &c.

Barclay (William), a learned civilian, was born in Aberdeenshire, in 1541. He spent the early part of his life, and much of his fortune, at the court of Mary Queen of Scots, from whose favor he had reason to expect preferment. In 1573 he went to France, and at Bourges commenced student of civil law under the famous Cujacius. He continued some years in that seminary, where he took a doctor's degree; and was soon after appointed professor of civil law in the university of Pont-a-Mousson, then founded by the duke of Lorraine. That prince afterwards made him counsellor of state and master of requests. Barclay, in 1481, married Ann de Malleville, a French lady, by whom he had his celebrated son, John. This youth the Jesuits would gladly have received into their society. His father refused his consent, for which reason they contrived to ruin him with the duke. Barclay embarked for Britain, where James I. offered him preferment, if he would join the church of England: but not choosing to comply, he returned to France in 1604; and, soon after, was appointed professor of civil law in the university of Angers, where he died in 1605, and was buried in the Franciscan church. He wrote elaborately in defence of the Divine Rights of Kings, in answer to Buchanan and others. His works are. 1. De Regno et Regali Potestate, &c. 2. Commentarias in tit. Pandectarum de Rebus Creditis, et de Jure-jurando. 3. De Potestate Papæ, &c. 5. Præmetia in vitam Agricolæ.

Barclay, Castle Hill of, and Barclay Moat, or Merkland of, two relics of Danish forts, on the banks of the Urr, in the parish of Colvend, in Kircudbrightshire.

BARCLOSH, an ancient edifice in the parish of Kirkgunzeon, which seems to have been built as a place of refuge, being remote, inaccessible, and more defended by nature than art. It belongs to the family of Herries.

BARCOCHAB, or BARCOCHEBAS, a Jewish impostor, whose real name was Akiba; but he took that of Barcochab, which signifies the Son of a Star; in allusion to the prophecy of Balaam, 'There shall a star arise out of Jacob.' He proclaimed himself the Messiah; and talking of nothing but wars, victories, and triumphs, made his countrymen rise against the Romans, by which means he was the author of innumerable disorders; he ravaged many places, took a great number of fortresses, and massacred an infinite multitude of people, particularly the Christians. The emperor sent troops to Rufus, governor of Judea, to suppress the sedition. Rufus, in obedience, exercised a thousand cruelties, but could not finish his attempt. The emperor was therefore obliged to send Julius Severus, the greatest general of that time; who attained his end without a direct battle: he fell on them separately; cut off their provisions; and at last the whole contest was reduced to the siege of Bitter, in the eighteenth year of Adrian. The impostor perished there. This war cost the Romans a great deal of blood.

BARCO-LONGA. See BARCA-LONGA.

BARCONE, a short broad vessel, of a middle size, used in the Mediterranean sea for the carriage of corn, wood, salt and other provisions, from one place to another.

BARD', } Fr. *barder*, Dut. *barderen*, *pha-*
BARD'ED. } *lerare*, phaleris ornare. This word, of so frequent occurrence in the ancient chronicles, is probably no more than a corruption of *barb*. They are apparently of similar origin, and it is certain that they are used synonymously. See BARB.

I saw the muster of the new band-men of arms, &c. some with feathers, staves, and pencils of their colours; some with sleeves and half coats; some with *bards* and staves, &c.

Burnet's History of the Reformation.

BARD', } The bard, was the poet, the
BAR'DICK, } musician, and the historian, of
BAR'DISH, } ancient times. The kind of song
BARD'LING. } which the bards sung, is called *barditus*, by Tacitus; and *barditus* is derived by Wachter from the Germ. *barten*, *pugnare*. The bards were, therefore, originally the composers of the war-song, the song of battle, and their task was to inspire the love of martial fame, by impassioned tales of heroic deeds. The title is now given to poets without discrimination.

There is among the Irish a kind of people called *bards*, which are to them instead of poets; whose profession is to set forth the praises or dispraises of men in their poems or rhime; the which are had in high regard and estimation among them.

Spenser on Ireland.

And many *bards* that to the trembling chord,
Can tune their timely voices cunningly.

Faerie Queene.

Then you that valiant soules and slaine in warre,
Do celebrate with praise that neuer dyes,
You *bards* securely sing your elegyes. *May. Lucan.*

And indeed my jealousy hath oft ve
particular inquisition of whatsoever rec
not a mark of most apparent truth, ever si
so intolerable antichronisms, incredible
bardish impostures; as well from ignorance
liberty of invention in some of our ancient

The *bard* who first adorn'd our native t
Tun'd to his British lyre this ancient song,
Which Homer might without a blush rehea

Rapt into future times, the *bard* begu
A virgin shall conceive, a virgin bear
From Jesse's root, behold a branch a
Whose sacred flow'r with fragrance fills
Th' etherial spirit o'er its leaves shall m
And on its top descends the mystic dove.
Pop

By Pella's *bard*, a magic name,
By all the griefs his thoughts could fr
Receive my humblest rite:
Long, Pity, let the nations view
Thy sky-worn robes of tenderest blue,
And eyes of dewy light!
Collin's O

Faith let him 'scape, let love and fame
With your kind sanction keep his scenes
Try to approve (applaud we will exempt
Nor crush the *bardling* in this hard attem
Cunningham. A Prologue to Love

The Welsh, kept in awe as they were
mans, harassed by the Saxons, and eterna
of the attacks, the encroachments, and the
hood of aliens, were on this account attach
Celtic manners; this situation, and thes
stances, inspired them with a pride and a
for maintaining a national distinction, an
serving their ancient usages, among which
profession is so eminent.
Warton's History of Engli

Their ashes flew;
No marble tells us whither. With their n
No *bard* embalms and sanctifies his song;
And history, so warm on meaner themes,
Is cold on this. *Cow*

BARD, in antiquity, denotes one w
poet by genius and profession; and '
of the battles of heroes, or the heavin
of love.' Ossian's poems, i. 37. Lor
justly observes, Sketches i. sec. 2. that
riosity of man is great with respect to
actions of his own species; and w
transactions are described in verse, acc
with music, the performance is enchant
ear, a voice, skill in instrumental m
above all the poetical genius, are re
excel in that complicated art. As su
are rare, the few that possessed them w
esteemed; and hence the profession
which, besides natural talents, requi
culture and exercise than any other kn

BARDS anciently were capital person
festival and at every solemnity. Th
which, by recording the achievements
and heroes, animated every hearer,
been the entertainment of every warlik
Demodocus is mentioned by Homer
lebrated bard; and Phemius, another
introduced by him deprecating the
Ulysses, Odyss vii. and urging him to

spare the poet's ever gentle kind.
d like this thy future fame would wrong,
ear to gods and men is sacred song.
then the poet, and thyself reward
hine to merit, mine is to record.'

reports, that at Roman festivals, an-
the virtues and exploits of their great
ere sung. The same custom prevailed
and Mexico, as we learn from Garci-
d other authors. We have for our au-
Father Gobien, that even the inhabitants
Marian islands have bards, who are
admired, because in their songs are cele-
he feats of their ancestors.

s, Celtic, British, &c. In no part of
ld did the profession of bard appear with
tre as in Gaul, in Britain, and in Ireland.
er the Celtæ or Gauls are mentioned by
writers, we seldom fail to hear of their
nd their bards; the institution of which
ers, was the capital distinction of man-
d policy. The druids were philosophers
ests; the bards their poets, and recorders
ic actions: and both these orders seem
subsisted among them, as members of
e from time immemorial. The Celtæ
d, from many remote ages, a system of
ne and manners, which appear to have
deep and lasting influence. Ammianus
inus, lib. xv. c. 9. gives them this tes-
that they cultivated the study of the
udable arts; introduced by the bards,
g in heroic verse the gallant actions of
us men; and by the druids, who lived
r in colleges or societies, after the Pytha-
manner, and philosophising upon the
subjects, asserted the immortality of the
Though Cæsar, in his account of Gaul,
t expressly mention the bards, yet it is
hat under the title of Druids, he com-
s that whole college or order; of which
ls, who probably were the disciples of
ds, undoubtedly made a part. According
ccount, the druidical institution first took
Britain, and passed from thence into
o that they who aspired to be thorough
of that learning were wont to resort to
He adds too, that such as were to be
among the Druids, were obliged to
to their memory a great number of
insomuch that some employed twenty
this course of education; and that they
think it lawful to record these poems in
but sacredly handed them down by tra-
om race to race. So strong was the at-
t of the Celtic nations to their poetry
r bards, that amidst all the changes of
vernment and manners, even long after
er of the Druids was extinct, and the
religion altered, the bards continued to
; not as a set of strolling songsters, like
ek 'Αοιδοι or rhapsodists, in Homer's
t as an order of men highly respected in
, and supported by a public establish-
We find them, according to Strabo, and
s, before the age of Augustus; and we
m remaining under the same name, and
g the same functions as of old, in
, and in the north of Scotland, almost
down to our own times. It is well known, that, in both these countries, every regulus or chief, had his own bard, who was considered as an officer of rank in his court.

Of the honor in which the bards were held, many instances occur in Ossian. They were the ambassadors between contending chiefs; and their persons were held sacred. 'Cairbor feared to stretch his sword to the bards, though his soul was dark. Loose the bards (said his brother Cathmor), they are sons of other times. Their voice shall be heard in other ages, when the kings of Temora have failed.' Ossian ii. 22. They and the Druids were exempted from taxes and military services, even in times of the greatest danger: and when they attended their patrons in the field, to record and celebrate their great actions, they had a guard assigned them. At all public assemblies they were seated near the person of the king or chieftain, and sometimes even above the greatest of the nobility and chief officers of the court. Nor was their profession less lucrative than it was honorable. Besides the valuable presents which they occasionally received from patrons, they had estates in land allotted for their support. So great was the veneration which the princes of those times entertained for their poets, and so highly were they delighted with their strains that they sometimes pardoned even their capital crimes for a song. We may reasonably suppose that a profession so honorable and advantageous would not be deserted. It was indeed much cultivated, and the accounts which we have of the number of bards in some countries, particularly in Ireland, are hardly credible. We often read, in the poems of Ossian, of 100 bards belonging to one prince, singing and playing in concert for his entertainment. Every chief bard, who was called allah redan, or doctor in poetry, was allowed to have thirty bards of inferior note constantly about his person; and every bard of the second rank was allowed a retinue of fifteen poetical disciples.

Though the ancient South Britons had originally the same taste and genius for poetry with those of the north, yet none of their poetical compositions have been preserved. Nor can we be surprised at this. After the provincial Britons had submitted to the Roman government, yielded up their arms, and lost their martial spirit, they could take little pleasure in hearing or repeating the songs of their bards, in honor of the glorious achievements of their brave ancestors. The Romans also, though they did not exercise the same barbarous policy, which was long after practisedby Edward I. of putting the bards to death, would at least discourage them, and discountenance the repetition of their poems. These sons of the song being thus persecuted by their conquerors, and neglected by their countrymen, either abandoned their country or their profession; and their songs, being no longer heard, were soon forgotten. It is probable that the ancient Britons, as well as many other nations of antiquity, had no idea of poems that were made only to be repeated, and not to be sung to the sound of musical instruments. In the first stages of society in all countries, the two sister arts of poetry and music seem to have been always united; every poet was a musician, and sung his own verses to the sound of some musical instrument. This, we are directly told by two writers of undoubted credit, was the case in Gaul, and consequently in Britain, at this period. 'The bards,' says Diodorus Siculus, lib. v. sect, 31, 'sung their poems to the sound of an instrument not unlike a lyre.' 'The bards,' according to Ammianus Marcellinus, lib. xv. c. 9, 'celebrated the brave actions of illustrious men in heroic poems, which they sung to the sweet sound of the lyre.' This account is confirmed by the general strain, and by many particular passages, of the poems of Ossian. Beneath his own tree, at intervals, each bard sat with his harp. They raised the song and touched the string, each to the chief he loved. Vol. ii. p. 112. The invention of writing made a considerable change in the profession of the bards. It is now agreed, that no poetry is fit to be accompanied with music, but what is simple: a complicated thought, or description, requires the utmost attention, and leaves none for the music; or, if it divides the attention, it makes but a faint impression. The simple operas of Quinault bear away the palm from every thing of the kind composed by Boileau or Racine, who were poets of a higher order. But when a language is enriched with variety of phrases, fit to express the most elevated thoughts, men of genius aspired to the higher strains of poetry, leaving music and song to the bards; which distinguished the profession of a poet from that of a bard. Homer, in one sense, may be termed a bard; for in that character he strolled from feast to feast. But he was not a bard in the original sense; he, indeed, recited his poems to crowded audiences; but his poems are too complex for music, and he probably did not sing them, nor accompany them with the lyre. The troubadours of Provence were bards in the original sense, and made a capital figure in the days of ignorance, when few could read, and fewer write. In later times the songs of the bards were taken down in writing, which gave every one access to them without a bard; and the profession sunk by degrees into oblivion. Among the Highlanders of Scotland reading and writing, in their own tongue, is not common even at present; and that circumstance supported long the bard profession among them, after it was dropt among the neighbouring nations.

Among the ancient British bards the most celebrated is the great Merlyn, whose true name, according to Lhuyd, is Merdhym. The genealogical sonnets of the Irish bards are still the chief foundations of the ancient history of Ireland. In the Highlands of Scotland there are considerable remains of many of the compositions of their old bards still preserved. But the most genuine entire and valuable remains of the works of the ancient bards, and perhaps the noblest specimen of uncultivated genius, are the poems of Ossian the son of Fingal, a king of the Highlands of Scotland, who flourished in the second or third century; collected by Mr. M'Pherson, and by him translated from the Erse, or Gaelic, language into English.

BARDÆ, in antiquity, housings for horses.

BARDANA, or BURDOCK. See ARCTIUM.

BARDARIOTÆ, in antiquity, a kind of ancient guards attending the Greek emperor, armed with rods, with which they kept off the people from crowding too near the prince when on horseback. Their captain or commander, was denominated primivergius. The word was probably formed from the BARDÆ, which see.

BARDAS, the brother of the empress Theodora, and uncle of the famous Photius, is said to have had no other good quality besides that of loving the sciences, which he established in the Eastern empire; for he was treacherous, cruel and ambitious. In A. D. 856 he assassinated Theoctistes, general of the emperor Michael's forces, and obtained his post. He caused the disgrace of the Empress Theodora; and St. Ignatius, patriarch of Constantinople, reproaching him for his vices, he had him deposed in 848, to make room for Photius. He was assassinated in 866 by Basilius, afterwards emperor.

BARDED, in heraldry, is used in speaking of a horse that is caparisoned. He bears sable cavalier d'or, the horse barded, argent.

BARDELLE, in the menage, a saddle made in form of a great saddle, but of cloth stuffed with straw, and tied tight down with packthread, without either leather, wood, or iron. In Italy they trot their colts with such saddles; and those who ride them are called Cavalcadours, or Scozone.

BARDESANES, a Syrian of Edessa in Mesopotamia, born in the middle of the second century, who became eminent, after his conversion to Christianity, for his zeal against heretics; against whom, we are informed by St. Jerome and Eusebius, he wrote a multitude of books; yet he himself fell into the errors of Valentinus, to which he added some others of his own. He taught that the actions of men depend altogether on fate, and that God himself is subject to necessity.

BARDESANISTS, a sect of ancient heretics, thus denominated from their leader Bardesanes. They went further than their teacher, and denied the resurrection of the body, and the incarnation and death of our Saviour; holding that these were only apparent or fantastical. They maintained that the supreme God, being free from all imperfection, created the world and its inhabitants pure and incorrupt: that the prince of darkness, who is the fountain of all evil and misery, enticed men to sin; in consequence of which, God permitted them to be divested of those ethereal bodies, with which he had endued them, and to fall into sluggish and gross bodies formed by the evil principle: and that Jesus descended from heaven, clothed not with a real but aerial body, to recover mankind from that body of corruption which they now carry about them; and that he will raise the obedient to mansions of felicity, clothed with aerial vehicles, or celestial bodies.

BARDEWICK, a town of Germany, in the circle of Lower Saxony, and duchy of Lunenburg; formerly a very large place, but being ruined in 1189, by the Duke of Saxony, has never yet recovered itself. It is seated on the Ilmenau, seven miles north-east of Lunenburg, and seventeen south-east of Hamburg. It belongs to the kingdom of Hanover.

D, a small fort and town in the valley of n Piedmont. The fort commanded the m the Valais into Piedmont. It was taken naparte in 1800, after his passage of the t. Bernard, and is now dismantled.

DI, a town of Italy, in the duchy of ia, on the Genoese frontier. It is near r Cevo, has a magnificent castle, and is iles south-west of Parma.

DOWIE, Loch, a lake of Stirlingshire, parish of Baldernock, extending about acres, and containing plenty of pike and The mansion-house of Bardowie lies few paces of it.

DSEY, an island in the Irish sea, on the Wales, about two miles long, and one vith a small harbour on the south-east side. s good anchorage within the bay, but the e is difficult for large ships. It forms h point of Cardigan bay, and formerly ed a well-endowed monastery. Long. ., lat. 52° 48′ N.

DT, a river of Germany, in Pomerania.

rT, a strong and rich town of Germany, duchy of Pomerania, with a castle and s harbour. It was subject to the Swedes 5, but now belongs to Prussia; and is near the Baltic sea, twelve miles west h of Stralsund.

DUS, a druid, the son of Dryis, and the g of the Celtæ.

E′, *v.* & *adj.*
′BONES,
′FACED,
FA′CEDLY,
FACED′NESS,
′FOOT,
′GNAWN,
′HEAD,
′LEGGED,
′LY,
′NECKED,
′NESS,
′WORN.

Heb. *parah*, to lay bare, and *bar*, pure, Goth. *bairhtjan*, Germ. *baren*, Dut. *baeren*, old Sax. *abarian*. It signifies the absence of ornament, of concealment. It is the condition of nudity, of destitution, of leanness and poverty, of rigid completeness, without any the least appendage. The verb represents the act of g off, of uncovering, of bringing to light osing what was hidden, of rendering des. *Barefaced* denotes the absence of all , or all shame; when applied to express nce, it characterises the individual as han ordinarily lost to all sense of de-

thought he rode al of the newe get;
evele; sauf his cappe, he rode all *bare*;
glaren eyen hadde he as an hare. *Chaucer.*

ereto he hath a groom of evil guise,
e scalp is *bare*, that bondage doth bewray,
h pols and pils the poor in piteous wize,
e himself upon the riche doth tyrannize.
Spenser.

r other meed may hope for none of mee,
hom nought else but *bare* life doth remaine,
that so wretched one as ye do see,
er to lingering death than loathed life to bee.
Id.

w many flies in hottest summer's day,
ize upon some beast, whose flesh is *bare*,
all the place with swarmes do overlay,
with their little stings do felly fare
So many theeves about him swarming are,
All which do him assayle on every side,
And sore oppress, ne any him do spare. *Id.*

You have an exchequer of words, and no other treasure for your followers; for it appears by their *bare* liveries, that they live by your *bare* words. *Shakspeare.*

So you serve us
Till we serve you; but when you have our roses,
You *barely* leave our thorns to prick ourselves,
And mock us with our *bareness*. *Id.*

To feed were best at home,
From thence, the sauce to meat is ceremony,
Meeting were *bare* without it. *Id.*

For their poverty, I know not where they had that; and for their *bareness*, they never learned that of me. *Id.*

She must have a husband;
I must dance *barefoot* on her wedding-day. *Id.*

Ambitious love hath so in me offended,
That *barefoot* plod I the cold ground upon
With sainted vow. *Id.*

The duke of Lancaster is dead;
And living too, for now his son is duke——
——*Barely* in title, not in revenue.
Id. Richard II.

He *bareheaded*, lower than his proud steed's neck,
Bespoke them thus. *Id.*

Here comes lean Jack, here comes *barebone*; how long is it ago, Jack, since thou sawest thy own knee? *Id. Henry IV.*

Your French crowns have no hair at all, and then you will play *barefaced*. *Id. Midsummer Night's Dream*

Going to find a *barefoot* brother out,
One of our order. *Id. Romeo and Juliet.*

Know, my name is lost,
By treason's tooth *baregnawn* and cankerbit.
Id. King Lear.

The external administration of his word, is as well by reading *barely* the Scripture, as by explaining the same. *Hooker.*

A desire to draw all things to the determination of *bare* and naked Scripture, hath caused much pains to be taken in abating the credit of man. *Id.*

That which offendeth us, is the great disgrace which they offer unto our custom of *bare* reading the word of God. *Id.*

Were it for the glory of God, that the clergy should be left as *bare* as the apostles, when they had neither staff nor scrip; God would, I hope, endue them with the self-same affection. *Id. Preface.*

He *barely* nam'd the street, promis'd the wine,
But his kind wife gave me the very sign. *Donne.*

He himself, with a rope about his neck, *barefooted*, came to offer himself to the discretion of Leonatus. *Sidney.*

Next, before the chariot, went two men *bareheaded*. *Bacon.*

There is a fabulous narration, that an herb groweth in the likeness of a lamb, and feedeth upon the grass, in such sort as it will *bare* the grass round about. *Id. Natural History.*

Though the lords used to be covered whilst the commons were *bare*, yet the commons would not be *bare* before the Scottish commissioners; and so none were covered. *Clarendon.*

The animosities increased, and the parties appeared *barefaced* against each other. *Id.*

According to their growth and years, they did change the exercises of their bodies; they did shave their heads, they went *bare-legged*, they were constrained to play naked together the most part of their time. *North. Plutarch*

Being summer he would go out *bare-necked* to the waste to work in his ground among his servants and other workmen. *Id.*

How they stood
Their glory wither'd : as when heaven's fire
Hath scath'd the forest oaks, or mountain pines,
With singed top their stately growth, though *bare*,
Stands on the blasted heath. *Milton.*

God said,
Be gathered now, ye waters under heav'n,
Into one place, and let dry land appear.
Immediately the mountains huge appear
Emergent, and their broad *bare* backs upheave
Into the clouds, their tops ascend the sky. *Id.*

He scarce had said, when the *bare* earth, till then
Desert and *bare*, unsightly, unadorn'd.
Brought forth the tender grass, whose verdure clad
Her universal face with pleasant green. *Id.*

Nor are men prevailed upon by *bare* words only, through a defect of knowledge ; but carried, with these puffs of wind contrary to knowledge. *South.*

Were it stripped of its privileges, and made as like the primitive church for its *bareness* as its purity, it could legally want all such privileges. *Id.*

He held a stirrup, while the knight,
From leathern *barebones* did alight. *Hudibras.*
He *bar'd* an ancient oak of all her boughs ;
Then on a rising ground the trunk he plac'd.
Dryden.

Then stretch'd her arms t' embrace the body *bare* ;
Her clasping hands inclose but empty air. *Id.*

It is most certain, that *barefaced* bawdry is the poorest pretence to wit imaginable. *Id.*

In the old Roman statues, these two parts were always *bare*, and exposed to view as much as our hands and face. *Addison.*

Envoys describe this holy man, with his Alcaydes about him, standing *barefoot*, bowing to the earth. *Id.*

For virtue, when I point the pen,
Bare the mean heart that points beneath a star ;
Can there be wanting to defend her cause,
Lights of the church, or guardians of the laws? *Pope.*

Making a law to reduce interest, will not raise the price of land ; it will only leave the country *barer* of money. *Locke.*

Though only some profligate wretches own it too *barefacedly*, yet, perhaps, we should hear more, did not fear tie people's tongues. *Id.*

If to some common's fenceless limits stray'd,
He drives his flocks to pick the scanty blade,
Those fenceless fields the sons of wealth divide,
And even the *bare-worn* common is deny'd.
Goldsmith. The Deserted Village.

Nor stoop'd at barren *bare* necessity ;
But still advancing bolder, led him on,
To pomp, to pleasure, elegance, and grace,
And breathing high ambition through his soul,
Set science, wisdom, glory in his view,
And bade him be the Lord of all below. *Thomson.*

O may no winter season, *bare* and hoary,
See it half finished : but let autumn bold,
With universal tinge of sober gold,
Be all about me when I make an end.
Kent's Endymion.

How well such deed becomes the turban'd brave—
To *bare* the sabre's edge before a slave !
Byron's Corsair.

BAREFOOT AUGUSTINES, BAREFOOT CARMELITES, are religious of the order of St. Austin and St. Carmel, who live under a strict observance, and go without shoes, like the Capuchins. There are barefoot fathers of mercy. Formerly there were barefoot Dominicans, and even barefoot nuns of the order of St. Augustin.

BAREFOOT FESTIVALS. The Greeks, Romans, and Barbarians, have a feast called nudipedalia, or the barefoot festival. The Abyssinians never enter their churches, nor the palaces of kings and great men, but barefooted.

BAREFOOTED, in antiquity. Sagittarius has a dissertation on those who went barefooted among the ancients, De Nudipedalibus Veterum ; wherein he treats 1. of such as went barefooted in journeys; either out of choice or necessity: 2. of barefooted religious penitents ; and, 3. of the Leviri.

BAREGES, or BARREGES, a rugged valley of Gascony, now included in the department of the Upper Pyrenees, arrondissement of Argellez. The village of Bareges, or Barreges les Bains, lies at the foot of the Pyrenees, contains about 60 houses, and 670 inhabitants, and is famed for its mineral waters, the principal ingredient in which is sulphurate of potash. The springs are of different degrees of heat, from 73° to 120° of Fahrenheit. Their water is limpid, unctuous, and chiefly recommended in consumptions, and in rheumatic and cutaneous diseases ; they are used both for bathing and drinking. The village is ten miles south of Bagneres. Long. 0° 8' E., lat. 42° 53' N.

BAREHEADED WOMEN, in antiquity. The Roman women, in times of public distress and mourning, went bareheaded, with their hair loose.

BAREILY, a district of Hindostan, to the east of the Ganges, between the 27th and 29th degrees of northern latitude. Under the Mogul government it was included in the province of Delhi, but was in fact a part of Kuttaher; in modern times known by the appellation of Rohilcund. It is very fertile, and well watered. The principal towns are Bareily, Anopsheher, Budayoon, Pillybeet, Moradabad, Rampoor, Sumbul, and Amroah. Towards the end of the seventeenth century this country was taken possession of by the Afghan chiefs of the tribe of Roh, and remained in their possession till 1774, when it was conquered by Shuja Addowleh, under whose, and his successor's jurisdiction, it was cruelly harassed and depopulated ; but, having been ceded to the British in 1802, it is daily recovering.

BAREILY, a city of Hindostan, and capital of the above district, is situated on the banks of the Sunkra river, about forty miles east of the Ganges. It was the capital of Hafiz Rahmut, the Rohilla chief, slain at the battle of Cutterah in 1774; it is a large and populous town, and the seat of the British judicial establishment of the province. Long. 79° 21' E., lat. 28°.

BAREITH, a ci-devant margravate of Germany, in the east division of Franconia, subject to the Brandenburg family, and thence styled Brandenburg-Bareith.

BAREITH, a town of Germany in Franconia, in the margravate, with a famous college belonging to the margrave of Brandenburgh-Bareith. It is fifteen miles south by east of Culmbach.

BARENTS (Dieterich), an excellent painter, born at Amsterdam, and the son of an industrious but middling artist. He studied in Italy, and became the favorite disciple of Titian, with whom he lived a long time; but at length returned to Amsterdam.

erformed many extraordinary pieces. 582, aged forty-eight.

ON, a town of France, in the de- the Channel, twenty miles E. S. E. of

I (Joseph), an ingenious writer of th century, was the son of an archi- . We have no account of the early fe; but his writings show that he had ough various countries. He came n 1750; and, in a short time, he ac- a knowledge of the English language t with facility and correctness. Be- ainted with Dr. Johnson about 1753, im introduced, as a teacher of the age, to the family of Mr. Thrale. went back to Italy, and commenced work, entitled Frusta Litteraria, ublished at Venice; but the freedom which appeared in it, giving offence, to leave that country, and he re- to England. He was tried at the in 1769, for killing a man who had m in the Haymarket, and was ac- 770 he published his Travels through n, Portugal, and Italy, in four vols. the Royal Academy was established, n secretary; and during Lord North's n he obtained a pension. He died d about seventy-three. His temper t, and his disposition liberal. His 1. A Dissertation on the Italian An Introduction to the Italian Lan- he Italian Library, 8vo.; 4. A Dic- lish and Italian, 2 vols. 4to.; 5. A the Italian Language, 8vo.; 6. An the Manners and Customs of Italy, 7. An Introduction to the most use- Languages, 8vo.; 8. A Dictionary Spanish, 4to.; 9. Tolondron, Speeches le, about his edition of Don Quixote, her tracts.

E, a fee of twenty pence, which every tted of felony pays the gaoler.

UR, a Cape of France, in the de- the Channel, twelve miles east of Near this cape part of the French estroyed in 1692, the day after the Hogue, obtained by the confederate dmiral Russel.

, a town of France in the depart- hannel, arrondissement of Valognes. about 140 houses, and 900 inhabi- arbour, which is now choked up with former times the best on the coast. m the Conqueror equipped the ex- ch effected the conquest of England. 1346 it was taken and destroyed by army, in the same campaign in which he battle of Cressy. Since that time been neglected, and is now fre- y by small vessels. The trade is ish, fresh and salted. Twelve miles rbourg. Long. 1° 10′ W., lat. 49°

a town of Italy, in the grand duchy on the Serchio. It is the capital of rdering on the principality of Lucca, 9000 inhabitants. In the neighbouring Appenines is found beautiful jasper. Six miles from Lucca.

BAR'GAIN, *v.* & *n.*
BAR'GAINING,
BAR'GAINED,
BAR'GAINER.
} See to BAR. Goth. *bairgan*, Ang.-Sax. *beorgan birgan byrgan*, Welsh *bargen*, Fr. *bargaigne*.

To make a confirmed agreement. A contract either with or without purchase, usually held binding.

I do thee no wrong. Did I not *bargayne* with thee, so that thou shouldeste haue a denarye for thy dayes laboure? Thou haste done thy laboure, thou haste thy couenaunte: I have nothing more to doe with thee.
Udall. Matthew, chap. xx.

Henry is able to enrich his queen,
And not to seek a queen to make him rich.
So worthless peasants *bargain* for their wives.
As market-men for oxen, sheep or horse.
Shakspeare.

No longer than we well could wash our hands,
To clap this royal *bargain* up of peace——
Heaven knows they were besmeared and overstained
With slaughter's pencil. *Id.*

No *bargains* break that are not this day made. *Id.*

Hold, sir, for God's sake: now your jest is earnest:
Upon what *bargain* do you give it me. *Id.*

What is marriage but a very *bargain?* wherein is sought alliance, or portion, or reputation, with some desire of issue; not the faithful nuptial union of man and wife. *Bacon.*

For those that are like to be in plenty, they may be *bargained* for upon the ground. *Id.*

There was a difference between courtesies received from their master and the duke; for that the duke's might have ends of utility and *bargain*, whereas their master's could not. *Id.*

No more can be due to me,
Than at the *bargain* made was meant. *Donne.*

Where sold he *bargains*, whipstitch? *Dryden.*

As to *bargains*, few of them seem to be excellent, because they all terminate in one single point. *Swift.*

No maid at court is less ashamed,
Howe'er for selling *bargains* famed. *Id.*

Give me but my price for the other two, and you shall even have that into the *bargain*. *L'Estrange.*

He who is at the charge of a tutor at home, may give his son a more genteel carriage, with greater learning into the *bargain*, than any at school can do.
Locke.

It is possible the great duke may *bargain* for the republic of Lucca, by the help of his great treasures.
Addison on Italy.

All offer incense at my shrine,
And I alone the *bargain* sign. *Gay.*

What is all righteousness that men devise,
What! but a sordid *bargain* for the skies;
But God as soon would abdicate his own,
As stoop from heav'n to sell the proud a throne.
Cowper.

It is adjusted, however, not by any accurate measure, but by the higgling and *bargaining* of the market, according to that sort of rough equality which though not exact, is sufficient for carrying on the business.
Smith. Wealth of Nations.

BARGAIN, in the old Scottish writers, is applied to an armed fight or battle. A battle where both parties have settled the preliminaries of weapons and manner of fighting, and are so far on equal terms of security and defence. In this sense it is used by Chaucer in the Romaunt of the Rose.

This is the strife, and eke the affraie,
And the batell that lasteth aie,
This *bargaine* end may neuer take
But if that she thy peace wil make.

Bargain and Sale, in the English law, requires to be farther explained. It is a contract whereby the bargainer, for some pecuniary consideration, bargains and sells, that is, contracts to convey the land of the bargainee; and becomes by such bargain a trustee for, or seized to the use of, the bargainee; and then the statute of uses completes the purchase: or, as it hath been expressed, the bargain first vests the use, and then the statute vests the possession. But as it was foreseen that conveyances thus made would want all those benefits of notoriety which the old common law assurances were calculated to give; to prevent clandestine conveyances of freeholds, it was enacted by statute 27 Hen. VIII. c. 16. that such bargains and sales should not enure (be available) to pass a freehold, unless made by indenture, and enrolled within six months in one of the courts of Westminster-hall, or with the custos rotulorum of the county. Clandestine bargains and sales of chattel interests, or leases for years, were thought not worth regarding, as such interests were very precarious till about six years before; which also occasioned them to be overlooked in framing the statute of uses: and therefore such bargains and sales are not directed to be enrolled. This omission has given rise to the species of conveyance by lease and release.

Bargains, in commerce, are distinguished, at Amsterdam, into three kinds, viz.

Bargains, Conditional, for goods which the seller has not yet in his possession; but which he knows have been bought for him by his correspondents abroad, and which he obliges himself to deliver to the buyer, on their arrival, at the price and conditions agreed on.

Bargains, Firm, those wherein the seller obliges himself to deliver to the buyer a certain quantity of goods, at the price and in the time agreed on.

Bargains, Optional, those wherein a dealer obliges himself, in consideration of a premium received in hand, either to deliver or take a certain quantity of goods at a fixed price, and within a time limited: but with a liberty of not delivering or not receiving them, if he thinks proper, upon forfeiture of their premium.

Bargains, Forehand, are those wherein goods are bought or sold, to be delivered at a certain time afterwards, some part of the price being advanced.

BAR'GE, Bar'ger, Bar'geman. See to Bar. Dut. *bargie*, low Lat. *barga*, Goth. *bairgan*, to strengthen. A barge, says Tooke, is a strong boat, and this is still its widest meaning, as in coal barge, &c. &c.; but it has also grown to mean, not merely a boat massy and sea worthy, but one of pleasure; light, airy, and elegant, more remarkable for beauty than strength.

So mykell was þat *barge*, it might not lightly saile,
And so heuy of charge, and þe wynde gan faile.
R. Brunne.

He knew wel alle the havens, as they were,
Frō Gotland to the Cape de Finistere,
And euery creke in Bretagne and in Spaine;
His *barge* ycleped was the Magdelaine.
Chaucer. Prologue.

Many wafarers make themselves glee, by putting the inhabitants in mind of this privilege; who again, like the Campellians in the north, and the London *bargers*, forslow not to baigne them.
Carew's Survey of Cornwall.

Eno. I will tell you,
The *barge* she sat in, like a burnish'd throne,
Burnt on the water; the poop was beaten gold,
Purple the sails; and so perfumed, that
The winds were lovesick with them; the oars were
silver;
Which to the tune of flutes kept stroke, and made
The water, which they beat, to follow faster,
As amorous of their strokes.
Shakspeare. Antony and Cleopatra.

Plac'd in the gilded *barge*,
Proud with the burden of so sweet a charge;
With painted oars the youths begin to sweep
Neptune's smooth face. *Waller.*

Barges are vessels of state, furnished with elegant apartments, canopies, and cushions; equipped with a band of rowers, and decorated with flags and streamers: they are generally used for processions on the water by noblemen, officers of state, or magistrates of great cities. Those annually exhibited on the Thames, at the election of the lord mayor of London, are uncommonly elegant.

Barges for the use of admirals and captains of ships of war, are smaller and of a lighter frame, and may be easily hoisted into or out of the ships to which they belong.

Barges of Burden, are for lading and discharging ships, and removing their cargoes from place to place in a harbour.

Barge, in ornithology, a name used by some authors for the godwit or stone-plover; the ægocephalus.

Barge, or Barges, a town of Piedmont in the district of the Four Valleys; seven miles south of Pinarolo, or Pignerol.

Barge-couples, in architecture, a beam mortised into another, to strengthen the building.

Barge-course, with bricklayers, a term used for that part of the tiling which projects over, without the principal rafters, in all sorts of buildings where there is either a gable or a kirkin head.

BARGH-MASTER, Barmer, or Bar-Master, from beirg-meister, Ger. i. e. master of mines; in the royal mines, the steward or judge of the barmote. The bar-master keeps two great courts of barmote yearly; and every week a small one, as occasion requires.

Barghmote, or Barmote, a court which takes cognizance of causes and disputes between miners. By the custom of the mines, no person is to sue any miner for ore debt, or for ore, or for any ground of variance, but only in the court of barmote, on penalty of forfeiting the debt, and paying the charges at law.

BARGRAVE (Isaac), an English divine, born in 1586, and educated at Clarehall, Cambridge. He was appointed chaplain to James I.; and in 1625 was made dean of Canterbury. When the civil war commenced he was imprisoned in the Fleet, by colonel Sandys, a man whom he had saved from the gallows! He died in 1642.

BARI, a province in the kingdom of Naples, which has the Gulf of Venice to the north, the Terra d' Otranto to the east, Basilicata to the south, and Capitanata to the west. It contains 1760 square miles, and 290,000 inhabitants, and is rich in grain, wine, oil, cotton, fruit, and saffron. The chief town, called Bari, lies on the Gulf of Venice, and is well fortified; it is a trading place of some consequence, with 18,000 inhabitants. The principal objects of its trade are wine, oil, and fruit; and a great deal of linen is woven here for inland consumption. It has the title of a duchy, and is an archbishop's see. Eighteen miles east of Trani, 120 E. N. E. of Naples. Long. 16° 52′ E., lat. 41° 15′ N.

BARI, a town of Hindostan, in the province of Bejapoor, thirty miles south-west of Raibaug.

BARJAPOOR, **BEJAPOOR**, or **BIJA-PUR**, (a corruption of Vijaya-puri, the impregnable, the ancient name of the capital;) is a large province in the Deccan, extending from the fifteenth to the nineteenth degrees of north latitude. It is bounded on the north by the province of Aurungabad, south by the Toombuddra River and North Canara district, east by Aurungabad and Beeder, and on the west by the Indian Ocean; including a superficial area of 350 miles in length, by 200 the average breadth. The chain of the western Ghauts traverses the province at a moderate distance from the coast, with which it is in perfect parallel; the surrounding region is mountainous, but the eastern part is more level, watered by several fine rivers, particularly the Krishna, the Beemah, the Toombuddra, and the Gutpurba; the latter of which, before the year 1790, formed the separating boundary between the dominions of Tippoo and the Mahrattas. The productions of this province are the same as of the Deccan generally, the internal traffic is considerable, and the banks of the Beemah, celebrated all over the continent for their superior breed of horses, supply the best cavalry in the Mahratta armies.

The most remarkable natural features of the province are rivers, of which the Krishna, deriving its name from the dark color of its waters, or from its mythological connexion with the Indian Apollo, the Crishna of the Hindoos, is the most important. Emerging from the western Ghauts, forty-two miles from the coast, this river takes a south-west direction, falls in with the Warnah about Merich, and then rolling its vast stream to the east receives the principal rivers which diversify this part of India in its course, and at last empties itself by three channels into the Bay of Bengal. Although from its lofty banks, which do not admit of extensive irrigation, this river contributes less to the fertilisation of the country than others of inferior importance, it is perhaps more abundant in gems than any other river of India; gold, chalcedonies, cats-eyes, onyxes, and even diamonds, being found in its bed.

Of the province generally, four-fifths have long appertained to the Mahrattas, and the remainder to the government of Nizam. The Peshwa, though nominal lord of the whole, has little effective jurisdiction. The population is estimated at seven millions, of whom one-twentieth part are Mahommedans, and the rest Hindoos of the Brahminical order. Two languages generally prevail; the Canara on the north, the Mahratta on the south of the river Krishna; which also forms an interesting line of separation between the two different styles of building, the houses to the south being covered with clay or mud, and flat roofed, those to the north having the roofs pitched and thatched.

At the conclusion of the war between the British and Sindia in 1804, the Mahratta territories of this province exhibited a scene of the greatest anarchy. The authority of the Peshwa was resisted by the chief of every petty village. The chiefs of the various banditti were almost innumerable; amongst whom Goklah, Appah Saheb, and Bala Saheb (the sons of Purseram Bhow, and heads of the Putwurden family), Appah Dessaye, Furkiah, Bapoojee Sindiah, Madarow Rastiah, the Rajah of Colapoor, Futteh Sing Bhoonslah, Chintamuny Row (the nephew of Purseram Bhow), Tantia, Punt Pritty Niddy, and others, presented formidable obstacles to the return of peace and tranquillity. The country had likewise been otherwise ravaged and depopulated, from the laxity of its internal government, and the rapid succession of governors appointed by the Peshwa, the preceding one uniformly opposing his successor. The chiefs above-named although commonly distinguished by the name of 'Southern Jaghiredars,' were properly the Serinjamy Sirdars of the Poonah state; the possession of whose lands being granted for the payment of troops employed in state service, might be changed annually; although in this instance the lands themselves, with several other species of property, had been retained for many years.

Amidst the confusions consequent on so embarrassed a state of government, the British empire interposed her arbitration, ascertained on the part of the Peshwa to what extent of service he was entitled from the Jaghiredars, and, on the part of the latter, engaged to guarantee their possessions, and protect them from the oppressions of the Peshwa's government. General Wellesley (now duke of Wellington) expressed his disapprobation of the projects of vengeance which the above sovereign had formed against the Putwurden family, and others of the Mahratta state in immediate subjection to Poonah; and in his march southwards in 1804, entered into negociations with the chiefs, adjusted the dissensions of the sovereign, and by the able co-operation of Col. Close and Mr. Strachey succeeded in what the home government contemplated, the final settlement of these complicated claims. That it was effected without bloodshed, is to the honor of British prudence and benevolence. MSS. Ferishta, Moor, Wilks, Scott, &c.

The territorial divisions of the province are as follows:—1. The Cóncan; 2. Cólá-púr; 3. Murtezá-ábád; 4. Ased-nagar; 5. District of Bijá-púr; 6. Sácar; 7. Ráï-chúr; 8. Mudgal; 9. Gajindra-gar'h; 10. Anágúndí; 11. Baucá-púr; 12. Gandac; 13. Núrgul; 14. Azím-nagar; 15. Ráï-bágh.

1. The first of these divisions, Cóncan, Cancana, or Cócan, includes a portion of territory 220 miles in length, and thirty-five in breadth, occupying the whole sea coast of the province. It is

bounded on the north by the river Sáwatrì, which separates it from Calyáni, on the west by the Indian Ocean, on the south by Canara, and on the east by the G'háts or Ghauts. Formed by the gradual declivity of the mountains towards the sea, it presents a very unequal surface, intersected by numerous streams and torrents, together with a coast diversified with bays and inlets, although without deep and spacious harbours. The soil below the Ghauts is fertile, producing grain, hemp, cocoa-nuts, &c. The trees planted near the coast are, however, more vigorous and fertile than those cultivated higher up the country, which is commonly attributed to the sea air.

The language of the province is peculiar, possessing a great resemblance to the Sanscrit, from which some imagine it is derived. It is chiefly cultivated by the Brahmans, a peculiar race, not acknowledged by their brethren in the rest of India.

The principal divisions of the province are Concan, B'honsala, and Goa. The former includes Fort Victoria, a fortress at the entrance of the Bancút river. This division, comprehending nine villages, was taken by the British forces in 1756. So great is the advantage of living under the British government, that in 1812 the population had nearly doubled within the last ten years. B'honsala, the second division of the Concan, is a beautiful district formed by a gentle slope of hills descending from the western Ghauts to the sea, and watered by numerous rivers and mountain torrents. Like the former, it has several strong posts or rocky heights, difficult of access.

Though thinly peopled, the soil is extremely fertile, producing cocoa, betel nuts, ginger, sugar, cardamoms, pepper, and other tropical vegetables in great abundance. Iron is also found in the mountains, though wrought in a very clumsy manner by the natives. Goa, now in possession of the Portuguese, forms the southern division of the Concan. Its capital, bearing the same name, although dignified by many noble churches and public buildings, is nearly deserted from the unhealthiness of its climate and the terrors of the Inquisition. So great is the fecundity of the Roman church in this settlement, that in the year 1808 were found no fewer than 2000 ecclesiastics, although the whole extent of the territory does not exceed 400 square miles. The trade has very much declined, and the wretchedness of the country presents a very striking contrast with the English settlements in its vicinity. where every luxury is to be found. It had formerly a considerable manufacture of arack, a spirituous liquor made from toddy, or tári, extracted from the trunks of palm trees; but this is now superseded by a similar spirit at Batavia, of which rice and sugar are the principal ingredients. The dialect that is used here is a barbarous mixture of the Portuguese, Canara, and Mahratta languages. This place has been rendered interesting to the English reader by the visit which Dr. Buchanan paid to it, a full account of which is inserted in his Christian Researches.

2. Cólá-pár, or Cola-poor, according to the former division of the province, was in the Sercar of Ráïbágh, and subsequently formed a small independent state, composed of several districts above and below the mountains, but so intermingled with the neighbouring states as not to be easily discriminated.

3. Mortezabad, a contraction of Morteza-abad, is a small hilly division of the province, at a much greater elevation above the sea than the Cóncan, and is traversed by the Krishna, which rises at Mahábaliser, within the same division of Bijápúr. Among the most remarkable places of this province is the hill-fort of Satarah, a strong-hold of no small celebrity in the Mahratta annals, standing in lat. 17° 42′ N., and long. 74° 12 E., on the pinnacle of a lofty hill, and accessible only by a narrow winding path, which admits no more than one person at a time. Its name, which signifies 'seventeen,' answers to the reputed number of its towers. A wall of solid rock encloses it on all sides to the height of thirty or forty feet. Similar sites are found in the surrounding country, and are occupied by fortresses, which, to a native army, must be nearly impregnable. Kelingah is considered as almost capable of baffling European skill if resolutely defended.

4. Ased-nagar (the city of Lions) is another division of this province. Its chief town is Pundar-púr, a large well-built handsome town, and, what is more extraordinary in an Indian city, has several broad well-paved streets. The markets are supplied with native productions and English manufactures. The banks of the river are lined with stone walls, and handsome flights of steps lead down to the water. The soil around is fertile, but little cultivated; the Brahmins considering it too sacred to be used for the unholy purposes of producing fruit for mortals.

5. Bejapoor, or Vijayapura, the Impregnable, The chief city, of the same name as, and formerly the capital of, the province, has, by European travellers of the last three centuries been denominated Viziapoor. The wall of the city was twenty feet thick, surrounded by a ditch of vast dimensions, excavated out of the solid rock, from the berme of which the curtain rises nearly forty feet, composed of huge stones strongly cemented, and frequently adorned with sculptural representations of lions, tigers, &c. The towers which flank the wall are numerous and of vast size, occurring at intervals of 100 yards. The fort is one of the largest in the world, and, measured by the counterscarp of the surrounding ditch, is no less than eight miles in circumference, and adorned with a spacious courtway from 150 to 200 yards broad. Within the citadel were the king's palace, the houses of the nobility, together with several large magazines; and without the walls were large suburbs, adorned with noble palaces.

The rock on which the city stood furnished abundance of stone for public and private buildings, and the style of their architecture unites elegance with solidity. The city is well watered and the soil rich: large sums of money, with other valuable articles, are also found among its ruins. It is said, in its most flourishing state, to have contained 984,000 inhabited houses and 1600 mosques.

enormous pieces of cannon, to the
f twelve, are to be seen here, corres-
vith the magnitude of the fort, of which
largest are of the following dimen-

1. A Malabar gun.

	Feet.	Inches.
ter at the breech	4	5
from breech to muzzle . .	21	5
ference of the trunnions .	4	7
ter at the muzzle	4	3
f the bore	1	9

s gun cast by Aurengzebe to comme-
orate the conquest of Bejapoor.

	Feet.	Inches.
ter at the breech	4	10½
t the muzzle	4	8
f the bore	2	4
. . . .	14	1
nference in the middle . . .	13	7

3. The gun called High-flyer.

	Feet.	Inches.
. . . .	30	3½
nference at the breach . . .	9	2
nference over the smallest of the moulding	6	0
ter of the bore	1	1

ass gun is fixed on its centre on an im-
n, fastened in the ground, and grasping
ions in the manner of a swivel, its
esting on a block of wood supported
k wall, so that it cannot recoil. For the
f this gun an iron ball weighing 2646
would be required. The two other guns
tructed of bars of iron hooped round,
carriages, but lying on blocks of wood.
ther provinces above enumerated, as be-
to the territory of Barjapoor are of minor
ce, and capable of affording but little

JESUS, or Elymas, a Jew, who pre-
o be a magician; and endeavouring to
Paul and Barnabas, was miraculously
lind, Acts xiii. 8.—12.

LHA, or Barilla, in botany, a plant
d in Spain for its ashes, from which the
kinds of mineral alkali are obtained.
e four plants, which in the early part of
owth, bear so strong a resemblance to
er, that they would deceive any but the
r critical botanist. These four are, ba-
ul, or as some call it, algazul, soza, and
a, or salicor. They are all burnt to
t applied to different uses, being pos-
f different qualities. Some of the far-
x more or less of the three last with the
d it requires a complete knowledge of
r, taste, and smell of the ashes to be able
their knavery. Barilla is sown afresh
ar. Its greatest height above ground is
es: each root pushes out a vast number
stalks, which again are subdivided into
sprigs resembling samphire; and altoge-
n a large spreading bush. The color is
reen; as the plant advances towards ma-
this color gradually changes to a dull
tinged with brown. Gazul bears the
affinity to barilla, both in quality and
nce. the principal difference consists in its growing on a still drier salter earth, consequently it is impregnated with a stronger salt. It does not rise above two inches out of the ground, spreading out into little tufts. Its sprigs are much flatter and more pulpy than those of barilla, and are still more like samphire. It is sown but once in three, four, or five years, according to the nature of the soil. Soza, when of the same size, has the same appearance as gazul, but in time grows much larger, as its natural soil is a strong salt marsh, where it is to be found in large tufts of sprigs, treble the size of barilla, and of a bright green color, which it retains to the last. Salicor has a stalk of a deep green color, inclining to red, which last becomes by degrees the color of the whole plant. From the beginning it grows upright, and much resembles a bush of young rosemary. Its natural soil is on the declivities of hills near the salt marshes, or on the edges of the small drains or channels cut by the husbandmen for the purpose of watering the fields; before it has acquired its full growth, it is very like the barilla of those seasons in which the ground has been dunged before sowing. In those years of manuring, barilla, contrary to its usual nature, comes up with a tinge of red, and when burnt falls far short of its wonted goodness, being bitter, more impregnated with salt than it should be, and raising a blister if applied for a few minutes to the tongue. Barilla contains less salt than the others; when burnt, it runs into a mass resembling a spongy stone, with a faint cast of blue. Gazul, after burning, comes as near barilla in its outward appearance as it does while growing in its vegetable form; but, if broken, the inside is of a deeper and more glossy blue. Soza and salicor are darker, and almost black within, of a heavier consistence, with very little or no sign of sponginess. All these ashes contain a strong alkali; but barilla the best and purest, though not in the greatest quantity. Upon this principle, it is fittest for making glass and bleaching linen; the others are used in making soap. Each of them would whiten linen; but all except barilla would burn it. A good crop of barilla impoverishes the land to such a degree, that it cannot bear good barilla a second time, being quite exhausted. For this reason the richer farmers lay manure on the ground, and let it lie fallow for a season, at the end of which it is sown afresh without any danger, as the weeds that have sprung up in the year of rest have carried off all the pernicious effects of the dung. A proper succession of crops is thus secured by manuring and fallowing the different parts of the farm, each in their turn. The poorer cultivators cannot pursue the same method for want of capital; and are therefore under the necessity of sowing their lands immediately after manuring, which yields them a profit just sufficient to afford a present scanty subsistence, though the quality and price of their barilla be but trifling.

Barilla, Barillia, or Bariglia, in the glass trade, is a sort of pot ashes imported from Spain, inferior in goodness to those of the Levant, called polverine when loose, small, and in powder, and rochetta when in hard rocky lumps The frit made of these becomes fine and clear crystal glass, especially that from the rochetar, or, the polverine in lumps; but the barilla of Spain, though it be usually fatter, yet makes not a glass so white, but usually inclining to a bluish color. The method used in making barilla is the same as that followed in Britain in burning kelp. The plant as soon as ripe is plucked up and laid in heaps, and then set on fire. The salt juices run out below into a hole made in the ground, where they run into a vitrified lump, which is left about a fortnight to cool. An acre may give about a ton.

BARILLARIUS, an ancient officer in monasteries and great households, who had the care of the casks and vessels of wine, &c.

BARJOLS, a small populous town of France, in the department of the Var, (a part of the ci-devant province of Provence,) nineteen miles from Riez.

BAR-JONAS, a Syriac designation of St. Peter, importing that he was the son of Jonas.

BARITONO, in music, denotes a voice of low pitch, between a tenor and a base.

BARIUM, in ancient geography, a town of Apulia, on the Adriatic; so called from the founders, who, being expelled from the island Bara, built this town.

BARIUM, the metallic basis of the earth barytes, and so called by its discoverer, Sir H. Davy. Take pure barytes, make it into a paste with water, and put this on a plate of platinum. Make a cavity in the middle of the barytes, into which a globule of mercury is to be placed. Touch the globule with the negative wire, and the platinum with the positive wire of a voltaic battery of about 100 pairs of plates in good action. In a short time an amalgam will be formed, consisting of mercury and barium. This amalgam must be introduced into a little bent tube, made of glass free from lead, sealed at one end, which being filled with the vapor of naphtha, is then to be hermetically sealed at the other end. Heat must be applied to the recurved end of the tube, where the amalgam lies. The mercury will distil over, while the barium will remain.

'This metal,' says Dr. Ure, 'is of a dark gray color, with a lustre inferior to that of cast-iron. It is fusible at a red heat. Its density is superior to that of sulphuric acid; for, though surrounded with globules of gas, it sinks immediately in that liquid. When exposed to air it instantly becomes covered with a crust of barytes; and when gently heated in air, burns with a deep red light. It effervesces violently in water, converting this liquid into a solution of barytes.' Sir H. Davy thinks it probable that barium may be procured by chemical as well as electrical decomposition. When chloride of barium, or even the dry earth, ignited to whiteness, is exposed to the vapor of potassium, a dark gray substance is found diffused through the barytes or the chloride, not volatile, which effervesces copiously in water, and possesses a metallic appearance, which disappears in the air. The potassium, by being thus transmitted, is converted into potash. From indirect experiments Sir H. Davy was inclined to consider barytes as composed of 89·7 barium + 10·3 oxygen = 100. This would make the prime equivalent of barium 8·7, and that of barytes 9·7, compared to that of oxygen 1·0; a determination nearly exact. Dr. Clarke of Cambridge, by exposing dry nitrate of barytes on charcoal, to the intense heat of the condensed hydroxygen flame, observed metallic-looking globules in the midst of the boiling fluid, and the charcoal was found to be studded over with innumerable globules of the most brilliant lustre and whiteness. On letting these globules fall from the charcoal into water, hydrogen was evolved in a continued stream. When the globules are plunged in naphtha, they retain their brilliancy but a few days. Barium combines with oxygen in two proportions, forming, 1st. barytes, and 2d. the deutoxide of barium. See BARYTES.

BAR'K, *v.* & *n.*
BAR'KBARED,
BAR'KY,
BAR'KER.
These have the same origin with the words barge, &c. The root from which they are derived conveys the idea of security and defence. See BAR. The defence of a tree is its *bark*. It is that which protects it from the weather. Hence the application of the term to the rind or outside covering of the trees. To *bark*, is used in opposite senses. It signifies either to strip off, or to cover, as with bark.

> And as in winter leaves ben biraft,
> Ech after other til trees be bare,
> So that there nis but *barke* and braunch ylaft.
> *Chaucer. Troilus and Creseide.*
>
> In a walnote, without ys a byter *barke*,
> And often þat biter *barke*, be þe shall aweye,
> Ys a curnal of comfort. *Piers Ploughman.*
>
> Thy palate then did deign
> The roughest berry on the rudest hedge;
> Yea, like the stag, when snow the pasture sheets,
> The *barks* of trees, thou brow'sd.
> *Shakspeare. Antony and Cleopatra.*
>
> So doth the woodbine the sweet honeysuckle,
> Gently entwist; the female ivy so
> Enrings the *barky* fingers of the elm.
> *Id. Midsummer's Night Dream.*
>
> What craftsman art thou, said the king,
> I pray thee tell me trowe,
> I am a *barker*, sir, by my trade;
> Now tell me what art thou?
> *Edward IV. and Tanner of Tamworth, in Percy.*
>
> The cause is, for that trees last according to the strength of their sap and juice; being well munited by their *bark* against the injuries of the air.
> *Bacon's Natural History.*
>
> Perhaps some cold bank is her bolster now,
> Or 'gainst the *bark* of some broad elm,
> Leans her unpillow'd head fraught with sad fears.
> *Milton.*
>
> The slant lightning, whose thwart flame driv'n down
> Kindles the gummy *bark* of fir or pine,
> And sends a comfortable heat from far,
> Which might supply the sun. *Id.*
>
> I'll carve thy name on *barks* of trees,
> With true love knots and flourishes,
> That shall infuse eternal spring
> And everlasting flourishing. *Hudibras.*
>
> For oft engendered by the hazy north,
> Myriads on myriads, insect armies warp
> Keen in the poison'd breeze, and wasteful eat
> Through buds and *bark* into the blackened core,
> Their eager way. *Thomson.*
>
> Wand'ring in the dark,
> Physicians for the tree have found the *bark*.
> *Dryden.*
>
> The severest penalties ought to be put upon barking any tree that is not felled. *Temple.*

s, after they are *barked* and cut into
mbled down from the mountains into the
Addison.

d and *bark-bared* trees may be preserved
up a shoot from the foot, or below the
, cutting the body of the tree sloping off
he shoot, and it will heal, and be covered
Mortimer.

dom of Monomotapa, they have a me-
ng lawsuits equally whimsical and uncer-
itness for the plaintiff chews the *bark* of
d with an emetic quality; which, being
sticated, is then infused in water, which
efendant to drink.
Blackstone's Commentaries.

& *n.* } Derived from the same
word as the preceding. Its
se is to guard and defend. Thus
a dog is his own defence and ours.
f danger, expresses anger, and ex-
To *bark*, therefore, is to make a
to annoy others, or to protect our-

he vengeance on the ashes cold,
ase, to *bark* at sleeping fame.
Spenser's Faerie Queene.

You dare patronage
ious *barking* of your saucy tongue
my lord. *Shakspeare.*

Sent before my time
reathing world, scarce half made up,
lamely and unfashionably,
bark at me. *Id. Richard III.*

our dogs *bark* so? be there bears i' th'
Id. Merry Wives of Windsor.

he done more than a base cur? *barked*
oise? had a fool or two to spit in his
t they are rather enemies of my fame
e *barkers.* *Ben Jonson.*

g mill, driv'n by her flowing gall,
stand, but chide, rail, *bark*, and bawl,
word could find, her tongue engross'd
all. *Fletcher's Purple Island.*

more age and strength more fierceness

im in a dark and desart wood,
nd guile poor passengers to slay,
flesh his *barking* stomach stay,
ir wretched blood his fiery thirst allay.
Id.

I have oft heard
Circe, with the graces three,
low'ry kirtled Naiades,
potent herbs and baleful drugs,
sung would take the prison'd soul,
Elysium; Scylla wept,
barking waves into attention,
rybdis murmur'd soft applause.
Milton.

} The *barks* are all of a family;
, } for their great progenitor, see to
bark, says Tooke, is a stout vessel, in
nse that *barge* is a strong boat, im-
y and defence. The word, however,
ways convey this its primary meaning.
tly applied indiscriminately to small
oyed either for commerce or plea-

p with dreadful storme long tost,
ent all her mastes and her ground-hold,
harbour, likely to be lost,
ne fisher *barke* doth neare behold,
omfort to her courage cold. *Spenser.*

And I, in such a desperate bay of death,
Like a poor *bark*, of sails and tackling reft,
Rush all to pieces on thy rocky bosom.
Shakspeare.

The duke of Parma must have flown, if he would have come into England: for he could neither get *bark* nor mariner to put to sea.
Bacon, on the War with Spain.

O my soul's joy:
If after every tempest come such calms,
May the winds blow till they have waken'd death!
And let the labouring *bark* climb hills of seas,
Olympus-high; and duck again as low
As hell's from heaven! If it were now to die,
'Twere now to be most happy; for, I fear,
My soul hath her content so absolute,
That not another comfort like to this
Succeeds in unknown fate. *Id.*

Whilst I, in vale of tears, at anchor ride
Where winds of earthly thoughts my sails misguide,
Harbour my fleshly *bark* safe in thy wounded side.
Fletcher's Purple Island.

Some have the boots of their own life to guide,
Some of whole families doe row the *barge*,
Some govern petty townships too, beside
(To those compar'd which of small *barkes* have
charge)
Some others rule great provinces, and they
Resemble captains of huge Argosies;
But when of kingdomes any gayne the sway,
To generals of fleets we liken these. *George Wither.*

When they come near the shore the *barkemen* leap out of the *barke* into the sea to keep the *barke* right, that she cast not thwart the shore.
Hackluyt. Voyages, &c.

It was that fatal and perfidious *bark*
Built in th' eclipse, and rigg'd with curses dark,
That sunk so low that sacred head of thine. *Milton.*

Who to a woman trusts his peace of mind,
Trusts a frail *bark* with a tempestuous wind.
Granville.

Like a flag floating when the *bark's* ingulph'd,
It floats a moment, and is seen no more;
One Cæsar lives, a thousand are forgot. *Young.*

Ill fares the *bark* with trembling wretches charg'd
That toss'd amid the floating fragments, moors
Beneath the shelter of an icy isle
While night o'erwhelms the sea, and horror looks
More horrible. *Thomson.*

My sole resourses in the path I trod
Were these—my *bark*—my sword—my love—my
God'
The last I left in youth—he leaves me now—
And man but works his will to lay me low.
Byron's Corsair.

BARK, in the anatomy of plants, is that exterior coat of trees, corresponding to the skin of an animal. For its organisation, &c. see BOTANY. As animals are furnished with a panniculus adiposus, usually replete with fat, which invests and covers all the fleshy parts, and screens them from external cold; plants are encompassed with a bark replete with fatty juices, by means whereof the cold is kept out, and in winter the spiculæ of ice prevented from fixing and freezing the juices in the vessels: whence it is that some sort of trees remain ever-green all the year round, their barks containing more oil than can be spent and exhaled by the sun, &c. The bark has its peculiar diseases, and is infested with insects peculiar to it. It appears from the experiments of Buffon, that trees stripped of their bark the whole length of their stems die in about three or four years. But it is very remarkable, that trees thus stripped in the time of the sap, and suffered to die, afford timber heavier, more uniformly dense, stronger, and fitter for service, than if the trees had been cut down in their healthy state. Something of this nature was observed by Vitruvius and Evelyn. The ancients wrote their books on bark, especially of the ash and lime tree, not on the exterior, but on the inner and finer bark called philyra; and this custom is yet frequent in the east. Many kinds of bark are used in the arts. Some in agriculture and in tanning leather, as the oak bark; some in physic, as the Jesuit's &c. others in dyeing, as the bark of alder and walnut trees; others in spicery, as cinnamon, mace, cassia lignea, &c.; and others for divers uses, as the bark of the cork tree, &c. In the East Indies they prepare the bark of a certain tree so as to spin like hemp. After it has been beaten and steeped in water, they extract long threads from it, which are something between silk and common thread; being neither so soft nor so glossy as silk, nor so rough and hard as hemp. They mix silk with it in some stuffs, and these are called millaes, and cherquemolles. The Japanese make paper of the bark of a species of mulberry tree. See MORUS. In the island of Otaheite, the natives make their cloth, which is of three kinds, of the bark of different trees; the paper-mulberry above mentioned, the bread-fruit tree, and the cocoa-tree. That made of the mulberry is the finest and whitest, and worn chiefly by the principal people. Of the bark, too, of a tree which they call poerou, the hibiscus tiliaceus of Linnæus, they manufacture excellent matting; a coarse sort which serves them to sleep upon, and a finer to wear in wet weather. Of the same bark they also make ropes and lines, from the thickness of an inch to the size of a small packthread.

BARK, JESUIT'S, or BARK by way of eminence, quinquina, or cinchona. See CINCHONA.

BARK, INDIAN, Thuris cortex, a medicinal bark, brought from the East, rolled up like cinnamon; of a rusty color, a warm aromatic bitter taste, and pleasant smell; sometimes used in fumigation against fits of the mother.

BARK, in navigation, is a general name given to small ships; it is however sometimes peculiarly appropriated to those which carry three mariners, who are trained up in the coal trade. Some apply this distinction to a broad sterned ship, which carries no ornamental figure on the stern or prow.

BARK, LONG, is a small vessel without deck, and longer and lower than the common barks, being sharp before, and commonly going both with sails and oars. It is built after the manner of a sloop, and in many places is called a double sloop.

BARK, WATER, a little vessel used in Holland for the carriage of fresh water to places where it is wanting, as well as for the fetching sea-water to make salt of. Water barks have a deck, and are filled with water up to the deck.

BARK BED, in gardening, is that sort of hot-bed which is either wholly or principally constituted of tanner's bark. This bed, from its preserving the most uniform and regular degrees of heat, is found by much the most useful in the propagation and culture of all kinds of tender exotic plants that are brought from warm climates, and which stand in need of the continued assistance of artificial heat in this part of the world. Beds of this nature, with a little trouble in the management of them, are found sometimes to support a pretty uniform and regular temperature for a considerable length of time. They are generally employed in hot-houses, being formed in pits or cavities constructed for the purpose, frequently the whole length of the house, six or seven feet in width, and three in depth, being enclosed by means of brick-work. See BARK PIT.

In these beds the pots of tender exotics are plunged and supported; while they at the same time afford the houses or stoves degrees of heat that may be proper for the growth and support of other plants that do not require to be plunged into the beds. Bark hot-beds are likewise occasionally formed in pits, constructed for them in the open ground, separately and detached from the hot-house. These are walled round with bricks, chiefly above the surface of the ground, having a frame or coping of wood upon the top, on which glass lights are fixed so as to slide with facility. See BARK PIT.

Beds formed of bark are also employed with success in various sorts of early productions, as early strawberries, melons, peas, French beans, &c., and, by the regular and moderate heat they afford, they mostly bring them forward in the greatest perfection. They are likewise made use of in forcing different sorts of curious flowers, of the bulbous, tuberous, and fibrous-rooted kinds, into early bloom—as hyacinths, dwarf-tulips, narcissus, jonquils, anemonies, ranunculuses, pinks, &c. also many flowering plants of the small shrubby kind, as roses, hypericums, &c. Bark beds are also employed with great advantage in forcing frames for the purpose of producing early fruit of the apricot, peach, and grape kinds. See FORCING FRAMES and HOT-WALLS.

Hot-beds constituted of bark, from the slow and regular manner in which the heat is in common evolved, are not so liable, as those of dung, to injure the plants by their steam; they are therefore to be preferred for all the more important purposes of forcing, where the material can be obtained. The heat of them may be perpetuated for a great length of time, by having recourse occasionally to the practice of forking or turning them over, adding in such operations about a third part of new tan or bark. The beds are, however, to be wholly, or in great part, renewed every autumn and spring.

BARK MILL, a mill constructed for the purpose of grinding and preparing bark till it is fit for the use of the tanner. Bark mills, like most other mills, are worked sometimes by means of horses, at others by water, at others by wind, or by steam. Several of these mills are described in different volumes of the Repertory of Arts and Manufactures, and an ingenious one in Gregory's Mechanics, vol. ii. Mr. Chapman's simple machinery for this purpose (for which he took out tent in July 1805) is thus described, as below, No. 3, of the Retrospect of Arts and Manu- tures. It may be worked by horses, or in any the usual ways. A large horizontal face-wheel es motion to a horizontal tumbling shaft, ich unites with the gudgeon of a large rag- rel: two other cylinders are posited horizon- ly with respect to this rag-barrel, one on each e; one of these is a smaller rag-barrel, the er is a spike-roller. A moderate-sized wheel one end of the larger rag-barrel has its teeth to y into the leaves of a pinion on the end of the ike-roller, thus communicating motion to that ller and to a large fly-wheel turning on the me axis: two or three other smaller wheels nd pinions communicate motion from the larger o the smaller barrel, and in such manner that he latter has a considerably less velocity than the former, and turns the contrary way. A horizontal hollow frame contains the barrels and spike-roller, and the bottom plate of this is movable by means of screws, so as to be capable of adjustment, and placed at a suitable distance from the rag-barrel, to act as a grinding-plate. Two screws, whose heads are at one end of this frame, serve to place the smaller rag-barrel at a convenient distance from the larger. This large barrel has about twenty rows of plates with their indentations turning downwards, while the indentations of the smaller barrel project upwards; so that this latter barrel gathers the bark and holds it fast, while the larger one tears it to pieces; and the spike-roller on the other side of this larger barrel keeps it clean. A sloping spout conveys the torn bark from the grinding-plate to an inclining cylinder, posited like the cylinders in dressing machines for flour-mills: the wires of this cylinder are of two different kinds with respect to fineness, the coarsest being lowermost; and beneath it two bins are placed, the one to receive the finer dust, the other the coarser or band-dust from the cylinder; and next to these stands a basket to receive the torn bark as it passes through the cylinder.

Bark Pit, a pit or cavity of a long, square, or other form, a yard or more in depth, appertaining to a hot-house or stove, &c. and being formed internally, or detached externally, in which to make tan or bark hot-beds, commonly called bark beds. The dimensions are four, five, or ix feet in width, or more, having length in pro- ortion to that of the hot-house, &c., and when n detached pits, such as may be required. In th methods they are formed by a low surround- g brick-wall, about a yard in height in the in- rnal pits, and in the external ones three or four et in front, by four or five in the back wall. ese different sorts of pits are indispensably ne- ary, where bark beds are intended, to make beds in, as the short loose nature of the tan ll not admit of being formed into compact re- lar beds without the aid of such kinds of en- sed pits to confine it close together within the its that are requisite in the formation of the ds.

Bark pits are necessary for various purposes, all hot-houses or stoves, and occasionally in cing-houses, &c. And detached bark pits, tinct from the hot-house, are likewise very useful in all extensive gardens on many occasions, being of great service in the culture of many sorts of tender exotics, and in raising various kinds under different methods of propagation, as well as for raising and nursing those of similar kinds in their young and tender growth; also occasionally for forcing and raising early productions of several sorts of hardy plants in the greatest perfection.

Hot-houses, or stoves of the common width, have in general only one pit, extending lengthways of them, as described above; but, if they are of considerable extent in length, the pit is sometimes divided in the middle by an intervening passage, to render it more convenient in performing the necessary culture of the plants. Some hot-houses, however, of very great width, have two internal bark pits ranging parallel lengthways, with an alley or passage extending between them, which renders them more commodious in giving the requisite culture to the plants that are plunged in the beds, than if the whole was in one extremely wide pit, in which it would often be very inconvenient to come at the plants placed towards the middle of them; so that two parallel pits, four or five feet wide each, become more eligible than one of eight or ten feet, and, by having an intervening passage, give a larger scope, and afford a better current of air, for the growth of the plants in the beds, as well as admit of viewing them to greater advantage and effect.

Detached bark pits should always be erected in warm dry situations, in a southerly aspect, and be constantly ranged lengthways in the direction of east and west, or nearly so, in order to have the whole front incline fully to the south sun, in a sloping manner, on which to place the glasses in the same position, being generally stationed either contiguous to the hot-house or stove, but at a proper distance in front of it, as the situation and convenience of the place may admit; or they may be erected at one or at both ends, extending in a line with it but separated by a passage between them. But detached bark pits are sometimes formed with ridged tops, like the roofs of houses, the glasses sloping to both sides, being ranged lengthways north and south, in order to have the benefit of the sun equally on both sides, and used for the same purposes as the others; though the common south-fronting pits, extending east and west, are more generally adopted, being less expensive in glass-work, &c. and, in general, more convenient for different purposes of the forcing kind. They should be constructed with walls of brick-work, forming the upright sides and ends nine inches thick; and where fire-flues are intended, the back wall should be of a proper thickness from the bottom to admit of having flues in the upper parts, a fire-place being contrived externally at the bottom at one end; or, in considerably extended pits a double fire-place may be formed in the middle, behind, or one at each end, either endways or in the back part, as may be thought the most convenient. Some detached pits are formed of wood-work only, by means of post and planking, serving for particular occasions, where no fire heat is required, as flues for that purpose cannot be admitted in such kinds of pits; where additional heat is occasionally necessary in such pits, it is effected by applying a strong lining of hot dung to the outsides; by which a good constant heat may be supported. In these bark pits sometimes the younger pine-apple plants are deposited and nursed for the first year; they are likewise occasionally used for the purposes of propagating, raising, and nursing tender plants in spring and summer, &c. also for forcing early esculent crops, flowers, &c.

The principal detached bark pits should, however, be formed with brick-work walls; as being the most effectual for general use, and of the greatest duration.

BARKARY, a tan-house, or place to keep bark in, for tanners.

BARK-BINDING, a distemper incident to trees; cured by slitting the bark, or cutting along the grain.

BARK-GALLING, is when the trees are galled with thorns, &c. It is cured by binding clay on the galled places.

BARKHAM (Dr. John), a learned divine and antiquary, born at Exeter about 1572, and educated at Oxford. He possessed successively several preferments, and died at Bocking in Essex, of which he was rector and dean, 1642. He was an accomplished scholar, and an exact historian. He had an excellent collection of coins and medals, which he gave to archbishop Laud, and which Laud afterwards left to the university of Oxford. Speed acknowledges the assistance he had from Barkham, whom he styles 'a gentleman, composed of learning, virtue, and courtesy.' The 'Annals' of John and Henry II. are reckoned to be chiefly of his writing. He had also the principal hand in 'Guillim's Display of Heraldry,' 1610, fol.

BARKAM-STED. See BERKHAMSTEAD.

BARKING OF TREES, the peeling off the rind or bark. This must be done, in our climate, in the month of May, because at that time the sap separates the bark from the wood. It would be very difficult to perform it at any other time of the year, unless the season was extremely wet and rainy; for heat and dryness are a very great hindrance to it.

BARKING, a town of Essex, on the river Roding, near the Thames, chiefly inhabited by fishermen. It once had a large monastery. The Danes destroyed the town in 870, but it was rebuilt soon after the coronation of William the Conqueror. The soil of the vicinity is remarkably rich, but the air is unhealthy. Goods are brought up from the Thames in vessels to its quay. It is seven miles from London, has a fair October 22d, and a market on Saturday.

BARKSDALE (Clement), a learned writer, born at Winchcombe, in Gloucestershire, in 1609. He received the first part of his education at Abingdon-school, and afterwards went to Oxford. He became master of the grammar-school at Hereford; but when the rebels took that city, he removed to Hawling, in Gloucestershire, and opened a school there. At the Restoration he was presented to the living of Naunton, and died there in 1687. His writings are, 1. Monumenta Literaria: sive obitus Elogia Ductorum virorum, ex Historiis J. A. Thuani, 4to. 2. Nympha Libethtis, or the Cotswold Muse, 8vo. 1651. 3. Life of Hugo Grotius, 12mo. 1652. 4. Memorials of Worthy Persons, 12mo. 1661; and other tracts. He also published several sermons.

BARKWAY, a town of Hertfordshire, on the great road from London to York; three miles from Royston, eighteen from Cambridge, and thirty-five from London. It has a fair July 20, and a market on Friday.

BARLAAM, a learned monk of the fourteenth century, was a native of Calabria. Having gone to Constantinople to study the Greek language, he gained the favor of the emperor Andronicus, of whom he received the abbey of St. Saviour, and was employed to negociate a reunion between the two churches. The emperor also employed him to solicit the assistance of the Christian princes against the infidels; and on his return he occupied his pen in writing against the Latins. He, however, quickly changed his principles on being made bishop of Gerace, in Italy, and commenced an opponent of the Greeks. He died in 1348. His letters were printed in Ingolstadt in 1604. He was a great opponent of Greg. Palama and the Hesychastæ.

BARLAAMITES, in church history, the followers of Barlaam.

BARLÆUS (Gaspar), professor of philosophy at Amsterdam, and one of the best Latin poets of the seventeenth century. He defended Arminius; and showed his abilities as an historian by his relation of what passed in Brasil, during the government of prince Maurice, of Nassau, published in 1647. He died in 1648.

BARLÆUS (Lambert), professor of Greek at Leyden. In conjunction with Rivius, he translated the confession of the reformed churches into Greek, and published the Timon of Lucian, with notes; also, Annotations on Hesiod's Theogony. He died in 1655.

BARLAND (Adrian), a learned Dutch critic, was professor of eloquence at Louvain. He published Notes on Terence, Virgil, Pliny the younger, and Menander; An Abridgement of Universal History; The Chronicles of the Dukes of Brabant; De Literatis urbis Romæ Principibus, &c. He died at Louvain in 1542.

BARLERIA, SNAP-DRAGON, in botany, a genus of the angiospermia order, and didynamia class of plants, ranking in the natural method under the fortieth order personatæ: cal. quadripartite, two of the stamina much less than the rest; the capsule quadrangular, bilocular, bivalved, elastic, and without claws; and the seeds are two. There are ten species; all natives of the warm parts of America, and therefore required to be kept in a stove, and treated like other tender exotics. They possess no great beauty nor any remarkable property.

BARLETTA, a sea-port town of Italy, in Naples, in the Terra di Bari, with a bishop's see. It is situated on the Gulf of Venice, thirty miles south-east of Manfredonia.

BARLETTA (Gabriel), a Dominican of singular fame in the fifteenth century. He was born at Barletta, in the kingdom of Naples, about 14 'His sermons,' says Dr. Watkins, 'exhibit such e of religious and comic expressions, and vulgar ideas, the serious and the ri- , and, what is more remarkable, the ritten in such a barbarous language, ıded of Greek, Latin, and Italian, as to dered them one of the most extraordi- ductions of literature. Such, however, fame among his contemporaries, as to asioned this proverb: 'nescit predicare it Barlettare.' From this singular and it, his sermons were eagerly sought after , and they quickly passed through more nty editions. The best is that of Ve- 577, two vols. 8vo.

LEY, *n. s.* derived by Junius from בר ; grain of which malt is made. It hath pike; the calyx, husk, awn, and flower, hose of wheat or rye, but the awns are he seed is swelling in the middle, and, ost part, ends in a sharp point, to which s are closely united. The species are, non long-eared barley. 2. Winter or rley, by some called *big*. 3. Sprat bar- attledoor barley. All these sorts of bar- own in the spring of the year, in a dry n some very dry light land, the barley arly in March; but in strong clayey not sown till April. The square barley, chiefly cultivated in the north of Eng- in Scotland; and is hardier than the ts.—*Miller*. Barley is emollient, moist- d expectorating; barley was chosen by ates as a proper food in inflammatory rs.—*Arbuthnot on Aliments*.

EYBRAKE, *n. s.* a kind of rural play.

ghbours prais'd she went abroad thereby,
eybrake her sweet swift feet to try. *Sidney*.

EY-BROTH, *n. s.* from barley and broth; ord sometimes used for strong beer.

Can sodden water
for surreyn'd jades, their *barley broth*,
eir cold blood to such valiant heat?
Shakspeare.

EY-CORN, *n. s.* from barley and corn; a barley; the beginning of our measure of the third part of an inch.

ong journey, choak'd with brakes and thorns,
r'd by ten thousand *barley corns*. *Tickell*

EY-MOW, *n. s.* from barley and mow; the ere reaped barley is stowed up.

never by yon *barley mow* I pass,
efore my eyes will trip the tidy lass. *Gay*.

EY BIRD, in zoology, a name given in o the fringilla spinus, or siskin, on ac- its visiting them in barley time.

EY, in botany. See HORDEUM and LTURE. The principal use of barley in is for making beer; in order to which malted. See BREWING. The Spaniards, whom malt liquors are little known, feed rses with barley as we do with oats. In ntry barley is a frequent ingredient in

EY, FRENCH, and BARLEY, PEARL, reed of the husk by a mill; the distinc- tween the two being, that the pearl s reduced to the size of small shot, all but the very heart of the grain being ground away.

BARLEY-WATER is a decoction of either of these, reputed soft and lubricating, of frequent use in physic. This well known decoction is a very useful drink in many disorders; and is recommended, with nitre, by some authors of reputation, in slow fevers.

BARLEY-BROTH. See BARLEY.

BARLEY-CORN, is used to denote a long measure, containing in length one-third of an inch, and in breadth one-eighth. The French carpenters also use barley-corn, grain d'orge, as equivalent to a line, or one-twelfth of an inch.

BARLEY-CORN, grain d'orge Fr.; is also used in building for a little cavity between the moulding of joiners' work, serving to separate or keep them asunder; thus called, because made with a kind of plane of the same name.

BARLOW (Francis), an English painter, born in Lincolnshire. On his coming to London, he was placed with a limner; but his genius led him chiefly to drawing of birds, fish, and other animals. There are six books of animals from his drawings, and his etchings are numerous; his illustrations of Æsop is his greatest work. He died in 1702. There is something pleasing in his composition and manner, though neither is excellent. His birds, in general, are better than his beasts.

BARLOW (Thomas), born in 1607, was appointed fellow of Queen's college, Oxford, in 1633, and two years after was chosen reader of metaphysics to the university. He was keeper of the Bodleian, and in 1657 was chosen provost of Queen's college. After the Restoration, he was nominated one of the commissioners for restoring the members expelled in 1648. He wrote at this time The Case of Toleration in Matters of Religion. In 1675 he was made bishop of Lincoln. After the popish plot, he published several tracts against the Roman Catholics; in which he shows an uncommon extent of learning and polemical skill. When the duke of York, however, was proclaimed king, he took every opportunity of expressing his affection towards him; but after the Revolution, as readily voted that the king had abdicated his kingdom; and was very zealous in excluding those clergymen who refused the oaths. His moderation, to call it by the softest name, was very great; so great, indeed, as often to bring the firmness of his character into question. But casuistry, which was his most distinguished talent, reconciles seeming contradictions. He died at Buckden, in Huntingdonshire, in 1691, aged eighty-five.

BARLOW (Joel), an American poet, the author of the Columbiad, was born at Reading, in the state of Connecticut, in the year 1757. He received his education at Dartmouth College; and in the latter part of the struggle which his country maintained for independence, served in he army. When his services were no longer retuired in the capacity of a soldier, he commenced the task of benefiting his country, and promoting his own fortune as a public writer; and, having engaged in partnership with a bookseller and printer at Hartford, conducted a newspaper there for two years. His education had been directed to the profession of law, although the troubles of the American union had, for a time, diverted his mind from legal pursuits; and on the restoration of tranquillity, and the establishment of independence, he resumed his original determination. He was accordingly called to the bar in 1785, and practised for some time with success. Two years afterwards he published his Vision of Columbus, a poem in nine books, which embraced almost all the events of the epic, which he subsequently gave the world under the title of the Columbiad. In the same year, or nearly about the same time, he accepted of the situation of agent to the Ohio Land Company. In this capacity he came to England to sell their lands, and to engage settlers to occupy them. The same employment led him to France, where he remained during the era of the French revolution; and as he witnessed in his own country a struggle for liberty and independence, ending in the most brilliant success, so he sympathised, without reserve, in the feelings of the French popular party, and anticipated from their efforts the most glorious results. Neither the precipitate violence with which the demagogues prosecuted their objects of reform, nor the atrocities of a licentious mob, who received the watchword of havoc and bloodshed from the fierce spirits now called into action, nor the acts of tyrannical injustice committed under the sacred name of liberty, could deter this intrepid republican from admiring and applauding the work of revolution. Nor was he satisfied with bestowing on it his own individual tribute of encouragement and approbation. He offered himself as one of the deputies from the London Constitutional Society, who should carry to the hall of the French convention the congratulations of England upon the glorious prospect of a regenerated people, and to unite their wishes with that assembly for the general diffusion over the world, of the freedom that assembly had conferred on their country. About the same time he published three political pamphlets, containing his opinions on passing events, and preaching the doctrine of reform. One of these is entitledt Advice to the privileged Orders, and was a, the time read with great avidity. His political lucubrations, and the part he took in conveying to the national convention of France the address of English subjects, were regarded with a jealous eye by the administration of this country, and rendered it unadvisable in him to return to Britain. He continued therefore at Paris, and was much connected with the leaders of the Gironde party. Washington, being then president of the United States, appointed him, in 1795, envoy to the Barbary powers, and with them, in the following year, he negociated treaties of peace. From the year 1796 till 1804, he principally resided at Paris, kept an elegant house, entertained occasionally the Americans, or the few English who could visit that city, and gained the esteem of the natives by the politeness and urbanity of his manners. He thus had the misfortune to see the tree of liberty, whose roots had been watered with the best blood of France, cut down by the axe of a military despot. He had the misfortune to see those ferocious citizens, who, at first, pretended a desire to recline under its shadow, only maddened with its fruits, and, in the paroxysms of the fury which they inspired, rushing forth to conquer and oppress the nations. In 1804 Mr. Barlow resolved to return to America, and in his way thither visited England. In the metropolis he was well received by many who had experienced his hospitality at Paris, and remained for a few months to enjoy their society. He was cured of his admiration for French liberty, and deplored the establishment of the imperial power; but his preference for a republic seemed to have remained unchanged. After returning to America, he occupied himself with revising, amending, and enlarging his poem on American history, which, upon republication, he entitled the Columbiad. It appeared in 1808, in a splendid volume, printed at Philadelphia, adorned with engravings, and was the most magnificent work that had issued from the American press. But its reception in the literary world was not conformable with the splendor of its appearance. It was read and criticised in this country when it first appeared, but it never had much circulation, and we believe is now almost forgotten. Mr. Barlow's principles and conduct could not fail to render him a favorite with the ruling party in the American states, and as he was, from long residence in Paris, well acquainted with the French character, and the principles of the French government, he was employed by president Maddison, in 1812, in a mission to France. The relations of America with the French empire were then in a very intricate undecided state, but requiring a speedy understanding and prompt adjustment; and as the emperor, in his Russian expedition, had carried the powers of the government along with him, Mr. Barlow set out from Paris to encounter the severities of a Polish winter in obtaining an interview with the Great Napoleon. He was not favored with a sight of the emperor; and though he lived till he returned from Moscow, the swords of the Cossacks had rendered his lustre less dazzling, and a treaty of alliance with him of less importance. He died near Cracow, in Poland, about the beginning of December, 1812.

Barlowe (William), bishop of Chichester, descended of an ancient family in Wales, was born in the county of Essex. In his youth he favored the Reformation; and went to Germany to be instructed by Luther and other preachers of the new doctrine. How long he continued a Protestant is uncertain: but he was a regular canon in the Augustine monastery of St. Osyth, in Essex, and studied at Oxford with the brethren of that order, where he took the degree of D.D. He was then made prior of the convent of Bisham, in Berkshire; and afterwards succeeded to the several priories of Blackmore, Typtre, Lega, Bromhole, and Haverford West. On the dissolution of abbeys, he resigned not only with a good grace, but persuaded several abbots to follow his example. Henry VII. was so pleased with his ready obedience on this occasion, that he sent him, in 1535, on an embassy to Scotland; in the same year made him bishop of S

; m two months after translated him to
e of St. David's, and in 1547 to that of
and Wells. During this time our good
, as appears from his epistle to the king,
r pretended to be, a staunch papist. It
itten in 1533, and in it he regrets that he
ade certayn bokes, and soffred them to be
ted, as the tretise of buryall of the masse,
n these tretises I perceive and acknow-
nyself grievously to have erred against the
sacrament of the altare; disallowing the
and denying purgatory, with slanderous
of the pope and my lord cardinal,' &c.
er, when Edward VI. came to the crown,
again a protestant; and for that reason,
en Mary's accession, was deprived of his
ic, and sent prisoner to the Fleet, where
tinued some time. At length he found
to escape, and join the other English Pro-
in Germany. Upon queen Elizabeth's
on, he was raised to the see of Chichester,
n after made a prebendary of Westmin-
He died in 1568, and was buried at Chi-
He had five daughters, each of whom
a bishop. He wrote, 1. The Buryall of
asse. 2. The Climbing of Fryers and
us Persons, portred with Figures. 3.
n Homelies. 4. A Book upon Cosmo-
5. The Godly and Pious Institution of
tian Man, commonly called the Bishop's
and several other works. He is said to
een the translator of the Apocrypha, as
he Book of Wisdom. His letters to M.
are in MS. in Corpus Christi College,
dge, Misc. i. 445.

OWE (William), a mathematician and di-
e son of the bishop, was born in Pem-
ire, whilst his father was bishop of St.
In 1560 he was entered of Baliol
Oxford; and in 1564 took a degree in
hich having completed by determina-
left the university and went to sea;
hat capacity is uncertain: however, he
considerable knowledge in the art of
on. About 1573 he became prebendary
hester, and rector of Easton near that
1588 he was made prebendary of Litch-
ich he exchanged for the place of trea-
Some years after, he was made chaplain
Henry, the son of king James I.; and
archdeacon of Salisbury. He was the
er on the magnet He died in 1625,
buried at Easton. His works are, 1.
igator's Supply, containing many things
pal importance belonging to Naviga-
the use of divers instruments framed
r that purpose. Lond. 1597, 4to. De-
Robert, earl of Essex. 2. Magnetical
ments, or divers pertinent observations
oved experiments concerning the nature
erties of the Loadstone. Lond. 1616,
A Brief Discovery of the idle animadver-
Mark Ridley, M. D. upon a treatise en-
gnetical Advertisements. Lon. 1618, 4to.

L. Goth. *barm*, Ang. Sax. barm, bearm.
h; to foster as in the bosom.

> hire *barme* this litel child she leid,
> ll sad face, and gan the child to blesse,
> led it, and after gan it kisse.
> *Chaucer. The Clerkes Tale.*

> A seint she wered, barred all of silk,
> A *barmecloth* eke as white as morwe milk.
> *Id. The Milleres Tale.*

BARM', } Welsh, *burm*, Sax. beoꞃm. Yeast:
BARM'Y. } the ferment put into drink, to make it work; and into bread to lighten and swell it

> Are you not he
> That sometime makes the drink to bear no *barm*;
> Mislead night wand'rers, laughing at their harm!
> *Shakspeare.*

Try the force of imagination upon staying the working of beer, when the *barm* is put into it. *Bacon.*

> Their jovial nights in frolics and in play
> They pass, to drive the tedious hours away;
> And their cold stomachs with crown'd goblets cheer,
> Of windy cider, and of *barmy* beer. *Dryden.*

BARM is said to have been first used by the Celtæ in the composition of bread. About the time of Agricola's entrance into Lancashire, a new sort of loaf had been introduced at Rome; which was formed only of water and flour, and much esteemed for its lightness; and it was called the water-cake from its simple composition, and the Parthian roll from its original inventors. But even this was not comparable to the French or Spanish bread for its lightness. The use of curmi, see ALE, and the knowledge of brewing, had acquainted the Celtæ with an ingredient for their bread, which was much better calculated to render it light and pleasant, than the leaven, the eggs, the milk, or the wine and honey of other nations. This was the spume which arose on the surface of their curw in fermentation, and which the Welch denominate burm, and we barm. The Celtæ of Gaul, of Spain, and most probably, therefore, of South Britain, had long used it; and their bread was, in consequence of this, superior in lightness to that of any other nation in the world. See BAKING, BREAD, and Yeast.

BAR-MASTER. See BARGH-MASTER.

BARMEKIN, a hill of Scotland, in the parish of Echt, in Aberdeenshire, of a conical shape. On the top of it are the remains of an ancient fortification, respecting which tradition is silent. Two dry stone walls and three ditches, all circular, are visible. The inner wall appears to have been twelve feet thick, and 330 yards in circumference: the outer about six feet thick and the outer ditch 560 yards in circumference.

BARMOUTH, a small market and sea-port town, in Merionethshire, North Wales. It is very pleasantly situated, and is much frequented as a bathing-place: 222 miles from London, and ten from Dalgelly,

BARMINE denotes such mine or ore as is adjudged at a court of Barghmote.

BARMOTE. See BARGHMOTE.

BARN, *v.* & *n.* See to *bar*, bairgain, Goth. to defend; to protect. A covered enclosure in which grain, &c. is protected and defended.

> But of herr songe it was as loud and yerne
> As any swallow sitting on a *berne*;
> Therto she coud skip and make a game
> As any kid or calf following his dame. *Chaucer*

While the cock with lively din
Scatters the rear of darkness thin,
And to the stack or the *barn* door
Stoutly struts his dames before. *Milton.*

And as an owl that on a *barn*
Sees a mouse creeping in the corn
Sits still, and shuts his round blue eyes
As if he slept, until he spies
The little beast within his reach,
Then starts and seizes on the wretch. *Hudibras.*

In vain the *barns* expect their promis'd load;
Nor *barns* at home, nor reeks are heap'd abroad.
Dryden.

I took notice of the make of *barns* here: having laid a frame of wood, they place, at the four corners, four blocks, in such a shape, as neither mice nor vermin can creep up. *Addison.*

An owl of grave deport and mien,
Who (like the Turk) was seldom seen,
Within a *barn* had chose his station
As fit for prey and contemplation. *Gay.*

As near a *barn*, by hunger led,
A peacock with the poultry fed;
All view'd him with an envious eye
And mock'd his gaudy pageantry. *Id.*

Barn. See **Bearn.** The past participle of *bearan*, to bear a child; *bearen* or *born;* still in use.

Goodlucke (and't be thy will), what have we here? mercy on's, a *barne*, a very pretty *barne*.
Shakspeare. Winter Night's Tale.

BARNABAS (St.), was born at Cyprus, and descended of the tribe of Levi, whose Jewish ancestors are thought to have retired thither to secure themselves from violence during the troublesome times in Judea. His proper name was Joses, to which, after his conversion to Christianity, the apostles added that of Barnabas, signifying the son of consolation. The time of his conversion is uncertain; but he is generally esteemed one of the seventy disciples chosen by our Saviour himself. At Antioch, Paul and Barnabas had a contest, which ended in their separation: what followed with respect to St. Barnabas is not related in the Acts of the Apostles. Some writers say, he went into Italy, and founded a church at Milan. He suffered martyrdom at Salamis, where some Jews, being come out of Syria, assailed him as he was disputing in the synagogue, and stoned him to death. He was buried by his kinsman Mark, whom he had taken with him, in a cave near that city. The remains of his body are said to have been discovered in the reign of the emperor Zeno, with a copy of St. Matthew's Gospel, written with his own hand, lying on his breast.

Barnabas's Day (St.), a Christian festival, celebrated on the 11th of June.

Barnabas's Epistle (St.), an apocryphal work ascribed to St. Barnabas, and frequently cited by St. Clement of Alexandria and Origen. It was first published in Greek, from a copy of father Hugh Menard, a Benedictine monk. An ancient version of it was found in a MS. of the abbey of Corbey, near 1000 years old. Vossius published it in 1656, with the epistles of St. Ignatius.

Barnabas's Gospel (St.), another apocryphal work, ascribed to St. Barnabas, the Apostle, wherein the history of Jesus Christ is related in a manner very different from the account given us by the four Evangelists. The Mahommedans have this gospel in Arabic, and it corresponds very well with those traditions which Mahomet followed in his Koran. It was, probably, a forgery of some nominal Christians; and afterwards altered and interpolated by the Mahommedans, the better to serve their purpose.

BARNABITES, a religious order, founded in the sixteenth century by three Italian gentlemen, who had been advised by a famous preacher of those days to read carefully the epistles of St. Paul. They are regular priests of the congregation of St. Paul; hence they were called Clerks of St. Paul; and Barnabites, because they performed their first exercise in a church of St. Barnabas, at Milan. Their habit is black; and their office is to instruct, catechise, and serve in mission.

BA'RNACLE, *n. s.*, probably of beapn, Sax. a child, and aac, Sax. an oak. A kind of shell-fish that grows upon timber that lies in the sea. A bird, like a goose, fabulously supposed to grow on trees.

It is beyond even an atheist's credulity and impudence to affirm, that the first men might grow upon trees, as the story goes about *barnacles;* or might be the lice of some vast prodigious animals, whose species is now extinct. *Bentley.*

And from the most refin'd of saints
As naturally grow miscreants,
As *barnacles* turn Soland geese
In th' islands of the Orcades. *Hudibras.*

Barnacle, an instrument made commonly of iron for the use of farriers, to hold a horse by the nose, to hinder him from struggling when an incision is made. It is also called horse-twitcher, or brake. The barnacle differs from pinchers, as the latter have handles whereby to hold them; whereas the former is fastened to the nose with a lace or cord.

Barnacle, in ichthyology, a kind of shell-fish, which cleaves to the bottoms and sides of ships in certain seas; the same with what is called by sailors clam; by naturalists, concha anatifera. There are divers species of shell fishes included under the denomination barnacles: some reduce them to two, viz. the balanus and pinna marina. See an account of several rare species of barnacles, by John Ellis Esq. Philosophical Transactions, vol. i. part ii. No. 113.

Barnacle or **Bernacle**, a species of Anas, common in the western isles of Scotland.—See **Anas.** Concerning the origin and species of this bird many fables have been advanced. Several authors have represented it as the produce of a shell-fish; but later naturalists, on better grounds, refer it to the natural manner of generation; making it a real goose, produced like others from an egg. Some reckon the barnacle the same with the anser Scoticus, or Soland geese: others will have it to be the same with the French macreuse. Dr. Robinson makes the barnacle to be of the goose, and the macreuse of the duck kind. The same author shows, that the macreuse is the scoter, or anas niger minor, described by Ray and Willughby, contrary to the opinion of Mr. Cattier, who took it for the greater [illegible] of Bellonius.

BARNADESIA, in botany, a genus of the polygamia æqualis order, belonging to the [illegible] genesia class of plants; the characters of which are: the cor. is radiated; the cal. is naked, imbricated, and pungent; the pappus of the rays feathery, of the disk bristly and retrofracted. There is but one species, viz. B. spinosa, a native of America.

BARNARD, or Bernard (John), the son of John Barnard, gent. was born at Castor in Lincolnshire, and educated at Cambridge. After several preferments, he was made a prebendary of the church of Lincoln. He wrote Censura Clerica, against scandalous ministers not being fit to be restored to church livings; the Life of Dr. Heylin; and several other works. He died at Newark, Aug. 17th, 1783.

Barnard (Sir John), M. P. for London, a spirited member of the opposition party, in the reigns of Geo. I. and II. He was born at Reading in Berkshire in 1685. His father was a wine merchant, to whose business he succeeded. He particularly distinguished himself, on being appointed by the body of wine merchants to state before the house of lords their objections to a bill then pending in that house; and, from the abilitities he displayed on that occasion, was nominated, in 1721, candidate for the city of London, and elected the following year. In 1725 he received the thanks of the common council, for opposing a bill introducing a change in the city elections. In 1727 he presented a bill for the better regulation of seamen. In 1730 he made a violent opposition to the bill prohibiting British subjects from lending money to foreign princes. In 1732 he received the honor of knighthood from Geo. II. whom he attended with an address; and, in 1733, he acquired much popularity in opposing Sir R. Walpole's excise bill, which was at last obliged to be relinquished, In 1735 he introduced a bill to limit the number of play-houses, which passed two years after, and is still in force. In 1737 he formed a scheme for reducing the interest on the national debt, which was afterwards adopted. In 1736 he and his brother-in-law, Sir R. Godschall, were elected sheriffs, and in 1738 he was chosen lord mayor of London. He died at Clapham in 1766, aged eighty, after repeatedly receiving the thanks of his fellow citizens for his public conduct.

Barnard, a township of Vermont, in Windsor county; sixty-five miles north-east of Bennington.

Barnard's Castle, a town and barony on the Tees, in the county of Durham, belonging to the earl of Darlington. It is fifteen miles from Richmond, thirty south-west of Durham, and 244 north-west of London; has a market on Wednesday, and fairs on Whit-wednesday, St. James's day, and 25th July.

BARNAUL, a town of Siberia, on the river of the same name, which falls into the Obi. It consists of 1000 houses, built chiefly of wood, with several public edifices of stone. This town is the seat of the supreme chancery of the mines contained in the great Altaian mountain chain, and has under its jurisdiction 40,000 peasants. Many of the foundries, however, are abandoned from the want of fuel, which has been exhausted. There is still one mine in the vicinity of Barnaul, very productive both in gold and silver. A foundry of bells, and manufactories of tiles and glass, are carried on in the town. Distant 100 miles south-east of Kolhyvane.

BARNAVE (Anthony), a victim of French republicanism, was born in 1762. Having become a member of the national assembly, he was there distinguished by the warmth and zeal which he displayed. On the stopping of the king at Varennes, he was appointed to conduct his majesty and family to Paris, in doing which he showed the most respectful attention to the royal captives. He was afterwards accused of being a royalist, and guillotined at Paris in 1794.

BARNAY, an ancient fort of Dunse, in Berwickshire. Dr. Anderson of Chirnside says, these Barnays, or Barnekins, were a kind of forts commonly placed, during the feudal system, at some distance from the baron's castle, to defend the bridge or passage to it.

BARNES (Joshua), a learned divine, born in London in 1654. He was educated at Christ's hospital, from whence he removed to Emanuel college, Cambridge, where he was chosen queen's professor of Greek in 1695; a language he wrote and spoke with the utmost facility. His first publication was a whimsical tract, entitled Gerania, or a New Discovery of the little sort of people called Pygmies. After that appeared his Life of Edward III. In 1700, when he had published many of his works, Mrs. Mason, of Hemmingford, in Huntingdonshire, a widow lady of between forty and fifty, with a jointure of £200 per annum, came to Cambridge, and desired leave to settle £100 a-year upon him after her death; which he politely refused, unless she would also condescend to make him happy with her person; and they were accordingly married. He wrote several other books, viz. Sacred Poems; the Life of Oliver Cromwell, the Tyrant; several dramatic pieces; a Poetical Paraphrase on the History of Esther, in Greek verse, with a Latin translation, &c.; and he published editions of Euripides, Anacreon, and Homer's Iliad and Odyssey, with notes and a Latin translation. This excellent man died in 1712, in the fifty-eighth year of his age.

Barnes (Robert), a martyr for the doctrines of Luther, was brought up to the church, obtained the degree of D. D., and became chaplain to Henry VIII., by whom he was sent to Germany, to consult with the divines of that county respecting the lawfulness of his divorce. While in that country he adopted the doctrines of the Reformation, and on his return to England propagated his new opinions with such zeal that he was taken into custody, brought to the stake, and burnt at Smithfield in 1540. He was author of a treatise on Justification, and several other tracts.

BARNET, Chipping Barnet, or High Barnet, a town on the top of a hill, partly in Middlesex, and partly in Hertfordshire, eleven miles north by west of London. It is a great thoroughfare; had a market on Wednesday, and two fairs, on April 8th, 9th, 10th, and September 4th, 5th, 6th. Near it two great battles were fought between the houses of York and Lancaster, in 1468, and 1471; in the last of which the earl of

Warwick and 10,000 men were slain. In 1740 Sir Jeremy Sambrooke, Bart. erected a stone column with an inscription on the spot.

BARNEVELDT (John d'Olden), the celebrated statesman, and one of the founders of the civil liberty of Holland, was born about 1550. He had a noble bold air, an expressive eye, and was an able speaker. He possessed a genius equally suited to commerce, finance, and negociation; the art of pushing any favorite point without seeming importunate, and of withdrawing without appearing indolent; the singular talent of penetrating the secrets of others, whilst he concealed his own. His merit raised him to the first dignities in the government, where he showed himself an enemy to injustice, bribery, parties, and novelties, even though they might appear useful. He undertook to restore the credit of his country, and had the good fortune to succeed. He was the chief author of the truce in 1599, which was concluded for twelve years, between the Arch Duke and the states. He had, by his assiduity prevented the latter from taking part in the troubles of Bohemia, of which Maurice, prince of Orange, was willing to avail himself, to advance his fortune. Barneveldt, who perceived the designs of this ambitious prince, judged it was his duty to oppose him, and Maurice never pardoned his zeal for the liberty of the republic; but having got his partisans to accuse him of a design to deliver his country into the hands of the Spanish monarch, on this absurd charge, he was tried by twenty-six commissaries deputed from the seven provinces, condemned to lose his life and his fortune confiscated. He heard the sentence with great composure. 'I have served the states,' said he, 'thirty years as pensionary of Holland, and the city of Rotterdam as pensionary ten years before. My labors and fidelity deserved another reward. If you will have my blood, it should seem that you might spare my fortune, and not ruin, on my account, my wife and children.' He was beheaded in 1619.

Barneveldt (Renatus and William), sons of the above, with a view of revenging their father's death, formed a conspiracy against the stadtholder, which was discovered. William fled; but Renatus was taken and condemned to die; which fatal circumstance has immortalised the memory of his mother, of whom the following anecdote is recorded. She solicited a pardon for Renatus; upon which Maurice expressed his surprise, that she should do that for her son which she had not done for her husband. To this she replied with indignation, 'I would not ask a pardon for my husband, because he was innocent. I solicit it for my son, because he is guilty.'

Barneveldt, an island, south of Terra del Fuego. Long. 66° 58′ W., lat. 55° 49′ S.

BARNFIARD, in ornithology, the name of a bird usually seen at sea, and esteemed as a foreteller of bad weather. It is about the size of a sparrow, its neck and back are black, and its breast and belly gray; its feet are red, and its bill black and somewhat broad. It skims very nimbly along the surface of the water.

BARNSTABLE, a county and peninsula of Massachusetts, bounded on the east and south by the Atlantic Ocean, north by Cape Cod Bay, west by Buzzard's Bay, and north-west by Plymouth county, where it is but four miles broad. This county lies nearly in the form of a man's arm when bent, with his hand turned inwards. The whole extent on the outer shore, from Woodend to Buzzard's Bay, is about 120 miles; and the inner shore on Cape Cod is nearly seventy; its greatest breadth is not more than two miles. It is in general a barren sandy soil, perhaps more so than any other part of the eastern states. The trees which grow here are mostly pitch-pine. It abounds with ponds of fresh water, generally well stored with fish. The principal produce is Indian corn and rye. It is divided into ten townships, viz. Barnstaple, Falmouth, Sandwich, Yarmouth, Harwich, Eastham, Wellfleet, Chatham, Truro, and Province-town. The chief towns are Barnstable and Falmouth.

Barnstable, a port of entry and post town of Massachusetts; situated in the above county, at the head of a bay of its own name. It is seventy-two miles south-east by south of Boston, and 119 of Philadelphia. Long. 4° 5′ E. lat. 41° 43′ N.

Barnstable, or **Barnstaple**, a sea-port town of Devonshire, seated on the river Taw, over which there is a good bridge. It is a corporation town, and sends two members to parliament. It lies thirty-six miles north of Exeter, and 191 from London, has a market on Friday, and fairs, Friday before April 21, September 19, and second Friday in December, which last four days, toll free.

BARNSTEAD, a township of New Hampshire, in Stafford county, thirty-two miles north-west of Portsmouth.

BARNWELL, i. e. Bairn's Well, a village about half a mile north-east of Cambridge. In 1092, a priory being founded in Cambridge in honor of St. Giles, by Hugolina, a Norman lady, Paganus Peverell, a favorite of Henry I., received a grant of the property; and finding the site upon which it had been commenced too small, he transferred it to the spot now called Barnwell, where many of the ancient walls still remain. A pottery fair is held yearly here, on a common called Midsummer-green, which commences on St. John's day, and lasts a fortnight. It assumed a legal form as early as the reign of Henry III., and is proclaimed by the heads of the university. Another fair, called Sturbridge fair, annually held in a meadow in this parish, has been traced by Dr. Stukely to the times of Carausius. Assured documents trace it up to king John, who granted it for the use and maintenance of a hospital of lepers, which here possessed a chapel dedicated to St. Mary Magdalen, which is still in existence. By a charter of Henry VIII. this fair was transferred to the mayor and corporation of Cambridge on the payment of 1000 marks. On the fourth of September the ground is marked out. On the eighteenth, the university officers first, and then the officers of the corporation, proclaim the fair, which lasts fourteen days. One of these days (September 25) is appropriated to the sale of horses. It was formerly the largest fair in England; and was attended in the year 1605 by Hackney coaches from London.

BARO, or **Baron** (Peter), was born at Estampes in France, and educated in the university of Bourges, where he was admitted a licentiate in the law: but, being of the Protestant religion, he was obliged to leave his native country to avoid persecution; and withdrawing into England, was kindly entertained by Lord Burleigh. He afterwards settled at Cambridge; and by Lord Burleigh's recommendation, was, in 1674, chosen professor of divinity there. For some years he quietly enjoyed his professorship; but at last a restless faction was raised against him, by his opposing the doctrine of absolute predestination, which rendered his place so uneasy that he left the university, and settled in London. He wrote, 1. In Jonam Prophetam Prælectiones xxxix; 2. De Præstantia et Dignitate Divinæ Legis; and other pieces. He died in London, about 1600.

BAROCCI, or **Barozzi** (Francis), a noble Venetian, who distinguished himself in the latter half of the sixteenth century by his erudition, and his extensive knowledge of mathematics. He had, however, the weakness to believe in magic, and his attempts to practise it brought him into the hands of the Inquisition, from which he escaped with difficulty, by the payment of a heavy fine. His published works are, Translations from Proclus and Hiero; four books of a Treatise on Cosmography; a Treatise on Geometry; and a curious volume, intituled, Il Nobilissimo ed Antichissimo giuco Pitagorico chiamata Ritmomachia, cioè battaglia di consonanze di numeri, with figures, imitated from the Latin of Buxerius. Among his MSS. is a description of Crete.

BAROCCIO (Frederic), a celebrated painter, born at Urbino. In his youth he travelled to Rome, where he painted several things in fresco. He then returned to Urbino: and giving himself up to intense study, acquired a great name in painting. His genius particularly led him to religious subjects. At his leisure hours he etched a few prints from his own designs; which are highly finished, and executed with great softness and delicacy. The Salutation is his capital performance in that way: of which we seldom meet with any impressions, but those taken from the retouched plate, which are very harsh. He died at Urbino in 1612, at the age of eighty-four.

BAROCHAN, a barony in the parish of Houstoun, in Renfrewshire, belonging to an ancient family of the name of Fleming, whose ancestors came from Flanders in the reign of David I., and one of whom was killed at the battle of Floddon. It had a very ancient cross on the side of the public road, which was removed by the proprietor, Malcolm Fleming, Esq. to a hill where the old mansion-house stood. In the front of this cross, there are two rows of images, four in each row, with long garments and clubs over their shoulders. Tradition is silent respecting it. The barony abounds in free-stone, coals, and lime-stone, and the mansion-house is ornamented with plantations of ash, plane, oak, larch, and fir.

BAROCHE, or **Broach**, capital of a district of the same name, in the province of Gujrat, on the north bank of the Nerbuddah. It is walled round, and was formerly a place of great trade. It is now inhabited by weavers and manufacturers of cotton cloth. Here they have the best cotton in the world, and of consequence the best baftas are manufactured in this place. The waters of the Nerbuddah are also said to have the peculiar property of bleaching cloths to a pure white. Baroche was ceded to Madhajee Sindia in 1782, but was retaken from his successor, Dowlet Row, in 1803, by Sir Arthur Wellesley, and has ever since remained in possession of the British. Long. 72° 5′ E., lat. 22° 15′ N.

BAROCO, in logic, a term given to the fourth mode of the second figure of syllogisms. A syllogism in baroco has the first proposition universal and affirmative, but the second and the third particular and negative, and the middle term is the predicate in the two first propositions. Example:

Ba Every man is a two-legged animal:
ro But every animal is not two-legged;
co Therefore every animal is not a man.

BAROM'ETER, } From *βαρος*, weight, and
Barometr'ical. } *μετρον*, measure. A machine for measuring the weight and variations of the atmosphere, in order to determine the changes of the weather, the elevation of particular parts of the earth's surface, &c.

> The measuring the heights of mountains, and finding the elevation of places above the level of the sea, hath been much promoted by *barometrical* experiments, founded upon that essential property of the air, its gravity or pressure. As the column of mercury in the *barometer* is counterpoised by a column of air of equal weight, so whatever causes make the air heavier or lighter, the pressure of it will be thereby increased or lessened, and of consequence the mercury will rise or fall. *Harris.*

> He is very accurate in making *barometrical* and thermometrical instruments. *Derh. Physico-Theol.*

Barometer. The name baroscope, signifying an indication of weight, was originally given to the mercurial tube by Sinclair, professor of philosophy in the university of Glasgow, in Charles II. reign: but the more definite one of barometer, obtained universally a short time afterwards. The barometer is founded upon the Torricellian experiment, so called from Torricelli the inventor of it, at Florence, in 1623; it is a glass tube, filled with mercury, horizontally sealed at one end; the other open and immerged in a basin of stagnant mercury; so that, as the weight of the atmosphere diminishes, the mercury in the tube will descend, and, as it increases, the mercury will ascend; the column of mercury suspended in the tube being always equal to the weight of the incumbent atmosphere. It was long the common opinion among philosophers, that the ascent of water in pumps was owing to what they called nature's abhorrence of a vacuum; and that thus fluids might be raised by suction to any height whatever. But an accident having, early in the seventeenth century, discovered that water could not be raised in a pump, unless the sucker reached to within thirty-three feet of the water in the well, it was conjectured by Galileo, who flourished about that time, that there might be some other cause of the ascent of water in pumps, or at least that this occurrence was limited to the finite height of thirty-three feet. Being unable to satisfy himself on this head, he recommended the consideration of the difficulty to Torricelli, who had been his disciple. After some time Torricelli suspected that the pressure of the atmosphere was the cause of the ascent of water in pumps; that a column of water thirty-three feet high was just a counterpoise to a column of air of the same base, and which extended up to the top of the atmosphere; and that this was the true reason why the water did not follow the sucker any further. And this suspicion was soon after confirmed by various experiments. Torricelli considered, that if a column of water thirty-three feet high were a counterpoise to a whole column of the atmosphere, then a column of mercury of about two feet and a half high would also be a counterpoise to it, since quicksilver is nearly fourteen times heavier than water, and so the fourteenth part of the height, or nearly two feet and a half, would be as heavy as the column of water. This reasoning he soon verified; for having filled a glass tube with quicksilver, and inverted it into a basin of the same, the mercury presently descended till its height, above that in the basin, was about two feet and a half, just as he expected. And this is what has, from him, been called the Torricellian experiment. The new opinion, with this confirmation of it, was readily acquiesced in by most philosophers, who repeated the experiment in various ways. Some, however, still adhered to the old doctrine of Linus, and raised several objections aginst the new one; such as that there was a film or imperceptible rope of mercury, extended through the upper part of the tube, which suspended the column of mercury, and kept it from falling into that in the basin. But this and other objections were soon overcome by additional confirmations of the true doctrine; particularly by varying the elevation of the place. It was hinted by Descartes and Pascal, that if the mercury be sustained in the tube by the pressure of the atmosphere, by carrying it to a higher situation it would descend lower in the tube, having a shorter column of the atmosphere to sustain it, and vice versa. And Pascal engaged his brother-in-law, M. Perier, to try that experiment for him, being more conveniently situated for that purpose than he was at Paris. This he accordingly executed, by observing the height of the quicksilver, in the tube, first at the bottom of a mountain in Auvergne, and then at several different altitudes; wherein it was found that the mercury fell lower and lower all the way to the top of the mountain; and so confirming the truth of the doctrine relating to the universal pressure of the atmosphere, and the consequent suspension of the mercury in the tube of the barometer. Thus, by the united endeavours of Torricelli, Descartes, Pascal, Mersenne, Huygens, and others, the cause of the suspension of the quicksilver in the tube of the barometer became pretty generally established. It was some time, however, after this general consent before it was known that the pressure of the air was various at different times at the same place. This could not, however, remain long unknown. The frequent measuring of the column of mercury soon showed its variations in altitude; and experience and observation taught that those variations in the mercurial column were always succeeded by certain changes in the weather, as to rain, wind, frosts, &c. Hence this instrument soon came into use, as the means of foretelling the changes of the weather; and on this account it obtained the name of the weather-glass, as it did that of barometer from its measuring the weight or pressure of the air.

It should not be forgotten that Pascal and his brother-in-law seem clearly to have seen the possibility of those numerous experiments of modern times, for ascertaining the altitude of mountains by the barometer. Early in the morning of the 19th of Sept. 1648, the latter assembled with a few friends in the garden of a monastery, situate near the lowest part of the city of Clermont, where he had brought a quantity of mercury, and two glass tubes hermetically sealed at the top. Having filled and inverted them as usual, he found the mercury to stand in both at the same height, namely, 26 inches and 3½ lines, or 28 English inches; when leaving one behind, in the custody of the subprior, he proceeded with the other to the summit of the mountain, and repeated the experiment. Here the party were surprised and delighted to see the mercury sink more than three inches under the former mark, and remain suspended at the height of 23 inches and 2 lines, or 24·7 English inches. In his descent from the mountain, he observed, at two several stations, that the mercury successively rose; and, on his return to the monastery, found it stood exactly at the same point as at first. Encouraged by the success of this memorable experiment, Perier repeated it on the highest tower of Clermont, and noted a difference of two lines at an elevation of twenty toises. Pascal, as soon as the intelligence reached him at Paris, made similar observations on the top of a high house, and in the belfry of the church of St. Jacques des Boucheries, near the border of the Seine; and so much was he satisfied with the results, that he immediately proposed the application of the barometer for measuring the relative height of distant places on the earth's surface. The substance, therefore, of all that has since been more accurately ascertained, was thus at once discovered. Pascal, it is well known, was attacked and persecuted as a heretic by the Jesuits, for these and similar pursuits; and when no other weapon would avail, they contested the originality of his experiments. Their base conduct on this occasion, however, only stimulated his ardor, and gave a keener edge to that wit, which he afterwards directed with such overwhelming energy against this insidious order of the priesthood. In 1653, he composed, though they were not published till after his death, two short but perspicuous treatises, On the Equilibrium of Liquors, and On the Weight of the Mass of Air. The laws of the equilibrium of fluids are here beautifully deduced from a single principle. In those tracts, he likewise gives a description of the hydraulic press. It has, however, been truly remarked, that the intention of these philosophers, was merely to ascertain whether the height of the mercury was affected by being carried to different altitudes, and it was some time afterwards that theorems and formulæ were invented for the purpose of barometrical measurement; the balance between the mercury and the atmosphere was indeed known, but the value of the weights remained to be determined. The first thing necessary to be ascertained was the law of the condension of air under different pressures. Mariotte in France, and Boyle and Townley in England, found from experiment that the density of this fluid was proportional to the compressing weight; but this law is only true when the temperature of the air remains constant; and attention was not at first paid to this important restriction, which in fact could not be indicated by experiments where the compressed volumes of air differed but little from each other in respect to temperature.

The law of compression being otherwise known, Halley made use of it for calculating the decrease of density in the beds of the atmosphere at various altitudes; and thus led to the mathematical formulæ, by means of which the difference of altitude of two places may be calçulated from the heights of the mercury in the barometer observed at each of them. Newton, in his Principia, perfected Halley's theory, by showing that regard was to be paid to the diminution of gravity, according as the distance from the surface of the earth increased; but, what is very remarkable, he, as well as Halley, omitted to consider the effect of the variations of heat, and of the progressive decrease of the temperature and density of the different strata of the atmosphere. The barometrical formulæ thus obtained, without the correction which renders them applicable to all temperatures, could only furnish a very imperfect approximation, and therefore philosophers and mathematicians, who endeavoured to apply them, found that they succeeded only in a few instances, and that generally the results seemed to be subject to various errors, which appeared to follow no law. Hypotheses were therefore formed for explaining these irregularities; but some maintained that no dependence whatever was to be placed upon such theorems; and others, that they ought to be wholly excluded from works of science. No person seems to have conjectured the true cause; and the omission is the more remarkable, when we reflect that Bouguer and Lambert, men of such peculiar and opposite talents; the one a most accurate observer and philosopher, and the other a very inventive and acute mathematician, were both much occupied with this instrument, and its application.

Deluc at last discovered the true source of these errors and anomalies, by searching in the observations themselves for the correspondence between the temperature of the air and the correction which the general formula required. Numerous experiments on the comparative expansions of air and mercury enabled him to perceive the law that those corrections ought to follow, and the quantity in all cases which should be assigned to them.

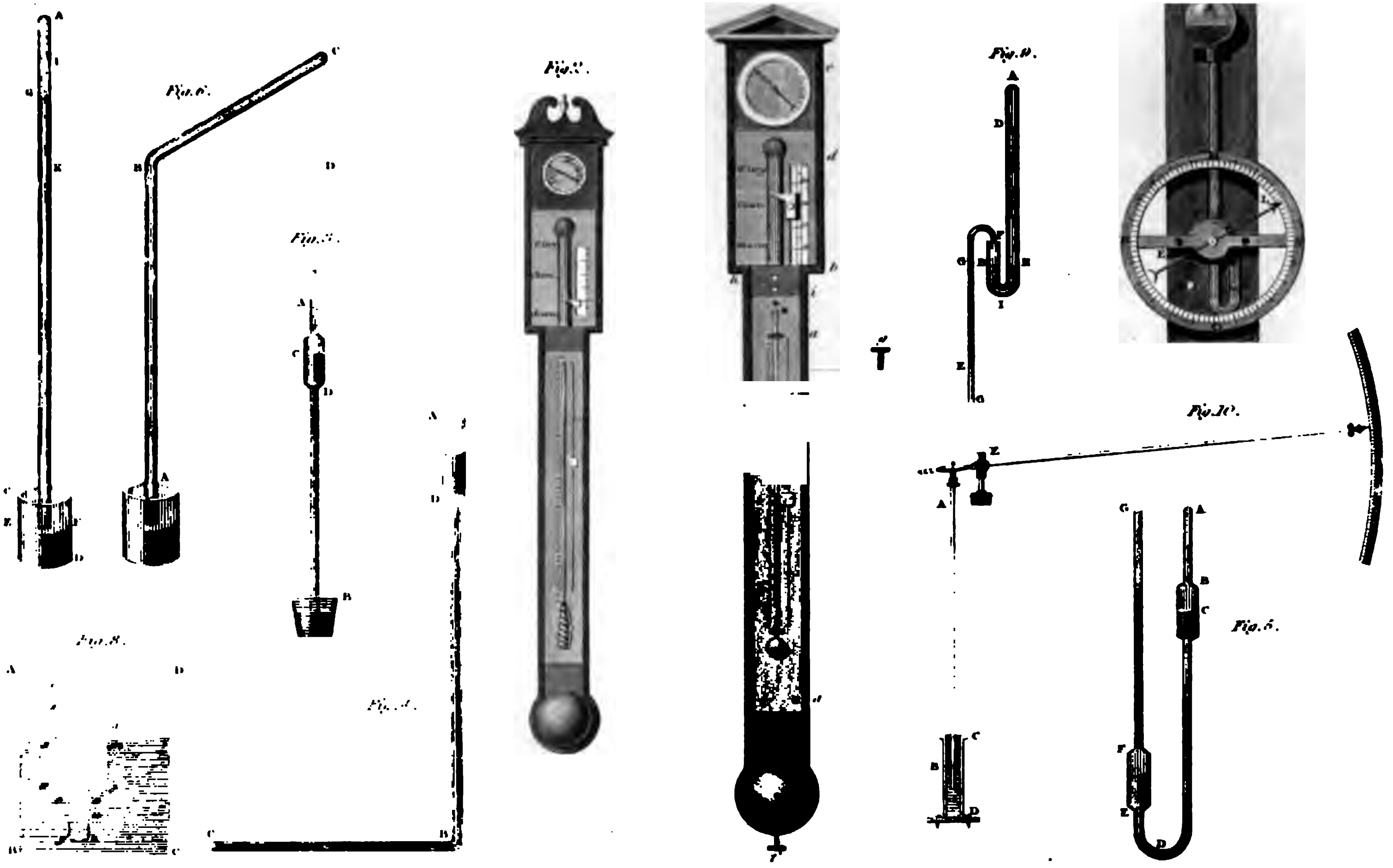
This remarkable discovery, by giving to the barometrical formula an unexpected accuracy, animated the zeal of philosophers, and observations were multiplied to a great extent. Dr. Maskelyne undertook to reduce the new formula into English measures, while Playfair added a correction for the variation of gravity in different latitudes. Sir George Shuckburgh, by very exact measures, verified the results of M. Deluc, and gave them a greater degree of precision: General Roy also made an application of it at a great number of places in the progress of his survey: the Alps were levelled by MM. Saussure and Pictet; the Pyrenees by M. Ramond, and the Andes by Humboldt; and the barometer rendered portable, became an indispensable instrument to all well-informed travellers.

Still the theory of barometrical levelling was far from being brought to its most simple terms. M. Deluc had adapted the constant co-efficient of his formula to a certain degree of the thermometer, which he called the normal temperature, and which he had fixed from the condition, that, for this temperature, the difference of level became a decimal multiple of the difference of the tabular logarithms of the observed barometrical heights. All the corrections relative to temperature which the formula required, commenced, therefore, according to M. Deluc, at the normal temperature; in consequence of which this point of commencement changed whenever the formula was applied to any other measures than French toises. These variations were very inconvenient: and it appeared much more natural to make all the corrections commence at some fixed term, as, for example, the freezing point, which is given by experiment, and common to observers of all countries. This is what Laplace has done, in a chapter of his Mécanique Celeste, in which he has established the requisite formula upon the most simple and accurate data. He determines the correction for temperature relative to the expansion of air, according to the experiments of M. Gay Lussac; but he has modified his results in such a manner as to take into the account the humidity of the atmosphere; and, what is very fortunate, the sum of this correction and the co-efficient of the expansion of air is just equal to $\frac{4}{1000}$. With respect to the expansion of mercury, Laplace employed the values obtained, in conjunction with Lavoisier, in experiments on the expansion of bodies, of which there unhappily remains only a small number of results. Finally, he determined the general co-efficient of the formula from barometrical observations themselves, by combining for this purpose, a great number of experiments made in the Pyrenees by M. Ramond, with a degree of care and an accuracy before unknown in this science. The value of this co-efficient has since been confirmed in a direct manner by the experiments made by M. Arago and M. Biot, on the comparative weight of air and mercury; so that all the elements of the barometrical formula, the research of which, has cost travellers so much labor, has been obtained directly, and with great accuracy, without quitting the chemical laboratory. Laplace's formula, founded upon data so exact and so ably combined, coincides with observations better than any other in which these advantages are not united, and the rigorous proofs to which MM. Ramond and Daubusson have submitted it experimentally, have demonstrated its utility. It still remained, however, to render the observations comparable with each other, though made with different barometers; which has also been done by Laplace, who has shown that the different indications of these instruments, in circumstances otherwise equal, are the effect of capillary attraction, and has given tables for correcting this effect.

The barometrical formula being thus improved, observations with that instrument have been considerably multiplied, and carried to a degree of precision almost incredible; a precision which has already led to the idea of distinguishing every place on the globe (in addition to its latitude and longitude) by its height above the level of the sea, or rather by its distance from the centre of the earth; which corresponds in principle with the determination of the position of a point in absolute space, by means of three rectangular co-ordinates; with this view various tables have been computed, and principles of approximation and compensation invented, highly creditable to their respective authors.

It remains only for us to describe the progressive improvement of this instrument. 1. The common, or Torricellian barometer, is represented in our plate BAROMETERS, fig. 1. A B is a glass tube, of ¼, or ⅓, or ½ inch wide (the wider the better), and about thirty-four inches long, being close at the top A, and the open end B immersed in a basin of quicksilver C D, which is the better the wider it is. To fill this, or any other barometer, take a clean new glass tube, of the dimensions as above, and pour into it well purified quicksilver, with a small funnel either of glass or paper, in a fine continued stream, till it wants about half an inch or an inch of being full; then stopping it close with the finger, invert it slowly, and the air in the empty part will ascend gradually to the other end, collecting into itself such other small air bubbles as unavoidably get into the tube among the mercury, in filling it with the funnel: and thus continue to invert it several times, turning the two ends alternately upwards, till all the air bubbles are collected and brought up to the open end of the tube, and till the part filled shall appear without speck, like a fine polished steel rod. This done, pour in a little more quicksilver to fill the empty part quite full, and so exclude all air from the tube; then stopping the orifice again with the finger, invert the tube, and immerse the finger and end, thus stopped, into a basin of purified quicksilver. In this position withdraw the finger, so shall the mercury descend in the tube to some place, as G, between twenty-eight and thirty-one inches above that in the basin at F, as these are the limits between which it always stands in this country, on the common surface of the earth. Then measure, from the surface of the quicksilver in the basin at F, twenty-eight inches to K, and thirty-one inches to I, dividing the space between them into inches and tenths, which are marked on a scale placed against the side of the tube; and the tenths are subdivided into hundredth parts of an inch by a sliding index carrying a vernier or nonius. These three inches, between twenty-eight and thirty-one, so divided, will answer for all the ordinary purposes of a stationary or chamber barometer; but for experiments on altitudes and depths, it is proper to have the divisions carried on a little higher up, and a great deal lower. In the proper filling and otherwise fitting up of the barometer, several circumstances are to be carefully noted; as, that the bore of the tube be pretty wide, to allow the freer motion of the quicksilver, without being impeded by an adhesion to the sides; that the basin below it be also pretty large, in order that the surface of the mercury at F may not sensibly rise or fall with that in the tube; that the bottom of the tube be cut off rather obliquely, that when it rests on the bottom of the basin there may be a free passage for the quicksilver; and that, to have the quicksilver very pure, it is best to boil it in the tube, which will expel all the air from it. This barometer is commonly fitted up in a neat mahogany case, together with a thermometer and hygrometer, as represented in fig. 2. As the scale of variation is small, being included within three inches in the common barometer, several contrivances have been devised to enlarge the scale, or to render the motion of the quicksilver more sensible.

Descartes suggested a method of increasing the sensibility of this instrument, which was executed by Huygens. This was effected by making the barometrical tube end in a pretty large cylindrical vessel at top, into which was inserted also the lower or open end of a much finer tube than the former, which was partly filled with water, to give little obstruction by its weight to the motion of the mercury, while it moved through a pretty long space of the very fine tube by a small variation of the mercury below it, and so rendered the small changes in the state of the air very sensible. But the inconvenience was, that the air contained in the water gradually disengaged itself, and escaped into the vacuum in the top of the small tube, till it was collected in a body there, and by its elasticity preventing the free rise of the fluids in the tubes, spoiled the instrument as a barometer. And this is the reason why a water barometer cannot succeed. This instrument, however, is represented in fig. 3. C D is the vessel, in which is united the upper or small water tube A C, with the lower or mercurial one C B. To remedy this inconvenience, Huygens thought of placing the mercury at top, and the water at bottom, which he thus contrived. A D G, fig. 5, is a bent tube hermetically sealed at A, but open at G, of about one line in diameter, and passing through the two equal cylindrical vessels, B C, E F, which are about twenty inches apart, and of fifteen lines diameter, their length being ten. The mercury being put into the tube, will stand between the middle of the vessels E F and B C, the remaining space to A being void both of air and mercury. Lastly, common water, tinged with a sixth part of aqua regia, to prevent its freezing, is poured into the tube F G, till it rises a foot above the mercury in D F. To prevent the water from evaporating, a drop of oil of sweet almonds floats on the top of it. But the column of water will be sensibly affected by heat and cold, which spoils the accuracy of the instrument. Although the invention of this barometer



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J. Shury sculp.

s claimed by Huygens, and also by De la Hire, appears first to have been contrived by Dr. oke in 1668, and described in Phil. Trans., . 185. It is most delicately movable; and, en properly managed, by far the fittest for a amber, or for amusement, by observations on changes of the atmospheric pressure. The ghtest breeze causes it to rise and fall, and it is ntinually in motion. But, for philosophical rposes, this, and all other instruments of the d, are inferior to the common barometer, th on account of their being less manageable, l also in point of accuracy. For their scale st be determined in all its parts by the com- n barometer, and therefore, notwithstanding ir great range, they are susceptible of no ater accuracy than that with which the scale a common barometer can be observed and asured.

The horizontal or rectangular barometer of rnoulli and Cassini is shown in fig. 4. AD a pretty wide cylindrical part at the top of the e, which latter is bent at right angles at B; lower part, BC, being turned into the hori- ntal direction and closed above at A, but open the lower end, where however the mercury nnot run out, being opposed by the pressure the atmosphere. This, and the foregoing con- vance of Huygens, are obviously founded on known principles of hydrostatics, 'that fluids the same base press according to their per- ndicular altitude, and not according to the antity of their matter;' so that the same pres- re of the atmosphere sustains the quicksilver t fills the tube BDA and the cistern D, as ould support the mercury in the tube alone. ence having fixed upon the size of the scale, as, r example, the extent of twelve inches instead three, that is four times as long; the area of a ction of the cylinder D must be four times at of the tube, and consequently its diameter uble; so that for every natural variation of an ch of air in the cylinder AD, there will be a riation of four inches in the tube CB. But on count of the friction against the sides of the ass, the quicksilver is liable to break; and the se and fall is then no longer equable; besides e mercury is in danger of being thrown out of e orifice at C, by any sudden motion of the achine.

The diagonal barometer, invented by Sir muel Moreland, fig. 6, is another method of larging the natural scale of three inches per- ndicular, CD, by extending it to any length, C, in an oblique direction. This is liable in me degree to the inconvenience of friction and eaking; and hence it is found that the diagonal rt, BC, cannot properly be bent from the per- ndicular more than in an angle of 45°, which ly increases the scale nearly in the proportion seven to five.

But the most perfect of all these instruments, an enlarged scale, unquestionably is Dr. ok's wheel barometer, fig. 7. This was in- nted about 1668, and is meant to render the erations in the air more sensible. Here the rometer tube has a large ball, AB, at top, and bent up at the lower or open end, where an n ball, G, floats on the top of the mercury in the tube, to which is connected another ball, H, by a cord, hanging freely over a pulley, turning an index, KL, about its centre. When the mercury rises in the part FG, it raises the ball, and the other ball descends and turns the pulley with the index, round a graduated circle from N towards M and P; and the contrary way when the quicksilver and the ball sink in the bent part of the tube. Hence the scale is easily enlarged ten or twelve fold, being increased in proportion of the axis of the pulley to the length of the index KL. But then the friction of the pulley and axis is some obstruction to the free motion of the quicksilver. Contrivances to lessen the friction, &c., may also be seen in the Phil. Trans. vol. 52, art. 29., and vol. 60, art. 10.

In the Philosophical Transactions, vol. 53, No. 29, Fitzgerald's improvement of the wheel barometer is described as furnished with two pulleys, which move on friction wheels; each of which turns an index on the centre of a graduated circle. The smallest circle is four inches in diameter, and divided into three equal parts, each again being subdivided decimally; and the changes, corresponding to the rise or fall of the mercury from twenty-eight to thirty-one inches, are marked on the margin of it, as they are on the scales of the common barometers. The large circle, which is proposed by the inventor to be thirty inches in diameter, is divided into three hundred equal parts, and the index belonging to it will therefore mark distinctly to the six-hundredth part of an inch in the rise and fall of the mercury. On the centre of this circle two registers are fixed, which are placed along the index when the instrument is adjusted; one of them is carried round as the index advances, and left round on its return; so that their distance will determine the limits of the variation from one observation to another.

Mr. Caswell's barometer, described in the Philosophical Transactions, vol. 24, seems to be as sensible and exact as any. Suppose ABCD, fig. 8, is a bucket of water, in which is the baroscope *x r e y z o s m*, which consists of a body *x r s m*, and a tube *e y z o*, which are both concave cylinders, made of tin, or rather glass, and communicating with each other. The bottom of the tube, *z y*, has a leaden weight to sink it, so that the top of the body may just swim even with the surface of the water by the addition of some grain weights on the top. When the instrument is forced with its mouth downwards, the water ascends into the tube to the height *z u*. To the top is added a small concave cylinder, or pipe, to keep the instrument from sinking down to the bottom: *m d* is a wire; and *m s*, *d e*, are two threads oblique to the surface of the water, which perform the office of diagonals: for while the instrument sinks more or less by an alteration in the gravity of the air, where the surface of the water cuts the thread is formed a small bubble, which ascends up the thread while the mercury of the common baroscope ascends, and vice versa. It appears from a calculation which the author makes, that this instrument shows the alterations in the air 1200 times more accurately than the common barometer. He observes, that the bubble is seldom known to stand still even for a minute; that a small blast of wind, which cannot be heard in a chamber, will sensibly make it sink; and that a cloud passing over it always makes it descend, &c.

Rowning's Compound Barometer has severalcontrivances for enlarging the scale, and that in any proportion whatever. One of these is described in the Philosophical Transactions, No. 427, and also in his Natural Philosophy, part 2; and another in the same part, which is represented in fig. 9. ABC is a compound tube, hermetically sealed at A, and open at C; empty from A to D, filled with mercury from thence to B, and from hence to E with water. Hence, by varying the proportions of the two tubes AF and FC, the scale of variation may be changed in any degree.

A Steel-yard or Lever Barometer, is represented by fig. 13, which enlarges the scale in proportion of the shorter to the longer arm of a steel-yard. AB is the barometer tube, close at A and open at B, immersed in a cylindrical glass cistern CD, which is but very little wider than the tube AB is. The barometer tube is suspended to the shorter arm of an index like a steel-yard, moving on the fulcrum E, and the extremity of its longer arm pointing to the divisions of a graduated arch, with which index the tube is nearly in equilibrio. When the pressure of the atmosphere is lessened, the mercury descends out of the tube into the cistern, which raises the tube and the shorter arm of the index, and consequently the extremity of the longer moves downwards, and passes over a part of the graduated arch. And on the contrary this moves upwards when the pressure of the atmosphere increases.

Artists, however, have of late directed their efforts rather to adapt barometers for particular purposes, and to improve their accuracy of action, than to enlarge the scale.

An instrument called the Chamber Barometer, constructed by Messrs. Jones, opticians, is shown in fig. 11. It consists of a barometer *d*, thermometer *a a*, and hygrometer *c*, all in one mahogany frame. The thermometer or hygrometer of this apparatus may be separated from the frame, and occasionally used apart if necessary. The thermometer is separated by means of two screws *a a*: and the hygrometer by unscrewing a brass pin at the back of the frame. The index of the hygrometer is set at any time, merely by moving with the finger the brass wheel seen at *c*; and the two sliding indexes of the barometer and thermometer are moved by rack work, set in action by the key *g*, placed in the holes *h* and *i*. The divisions of the barometer, plate *b*, are in tenths of an inch, from twenty-eight to thirty-one inches, and these are subdivided into hundredths by the nonius or vernier scale, on a sliding slip of brass. The vernier scale is divided into ten equal parts, which are equal to eleven on the scale of inches, or to eleven-tenths of an inch. By this means the height of the mercury at E is evident merely by inspection to the one-hundredth part of an inch, according to the principle of the vernier scale.

A more common sort of barometer is frequently made, which differs from the one above principally in this, that in general it is not supposed to register to the same degree of accuracy, having no vernier, and being meant for the common purposes of a weather-glass, its face is marked with different words indicating the probable shades of weather peculiar to different altitudes of the mercury. As the lowest state of the mercury in this country is not less than twenty-eight inches, nor the highest above thirty-one inches, this lowest point on the scale, on the face of the instrument, is marked stormy, and the latter very dry for summer, and on the other side very hard frost for winter. To the next half-inch below this highest point are written set. fair on the one side, and set. frost on the other. At thirty inches, the word fair is placed on the one side, and frost on the other; and at twenty-nine inches and a half there is marked changeable, both for summer and winter. At twenty-nine inches we have rain on the one side, and snow on the other; and at twenty-eight inches and a half, much rain on the summer side, and much snow on the winter; these terms, for want of room, are omitted in the figure.

In the better sort of these chamber barometers the reservoir of mercury is a leathern bag, which is more or less compressed by the atmosphere, according to its greater or less pressure, and the scale is supposed to commence from the bottom of the tube; there is also a screw at the bottom, fig. 29, by which the mercury may be forced to the top of the tube, and thus prevented from oscillating when the instrument is removed. This construction, however, is not sufficiently accurate for those instruments designed for the mensuration of altitudes; portable barometers, therefore, have several adjustments peculiar to this purpose.

Portable Barometer.—One of the best instruments of this kind, by Troughton, is exhibited in figs. 12, 13, 14, and 15, (Barometers, plate II.) Its distinguishing characteristic consists in the excellent manner in which the mercury in the cistern is set to the zero in the scale of inches. For this purpose a glass cylinder, of about two inches and a half diameter, and as much in length, contains the mercury. An external covering of hollow brass, terminating in an interior screw a little above and below the glass, admits external screw pieces, whose ends, well leathered, being pressed hard against the ends of the glass, prevent the escape of the fluid. Near the upper end of the brass cover are two slits, made horizontally, one before, and the other behind, exactly similar, and opposite to each other. At bottom is a screw, seen better in the section, fig. 13, which, acting upon the usual leathern bag, forces the quicksilver upwards at pleasure, and, by filling every part, renders the instrument portable. But the primary design of the screw is, to furnish the means of adjusting the surface of the mercury in the glass cistern, so as just to shut out the light from passing between it and the upper edges of the slits in the brass cover. This is the mode of adjusting to zero; and it follows, that the upper edges of the slits must represent the beginning of the scale of inches. The frame is entirely made of brass tube, and above the cistern is of about 1·1·inch in diameter. The first ten inches of the lower end are occupied by a thermometer, whose bulb, bent inwards, is concealed within the frame. At about three inches

BAROMETERS.

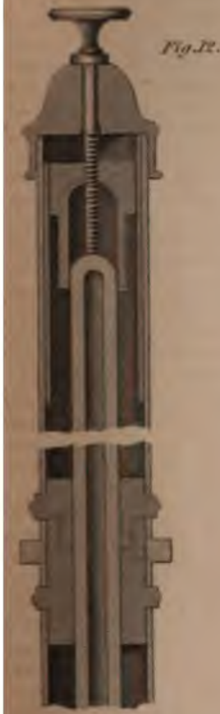


Fig. 12.

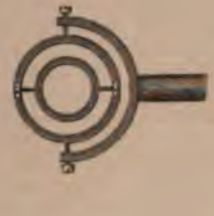


Fig. 18.

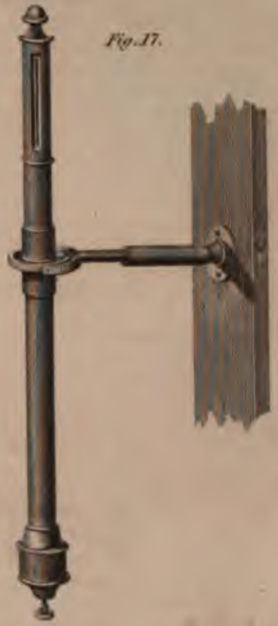


Fig. 17.

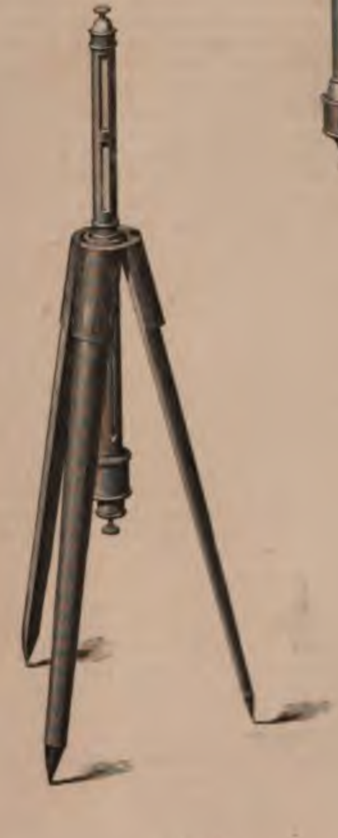


Fig. 14.

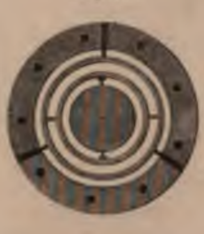


Fig. 16.

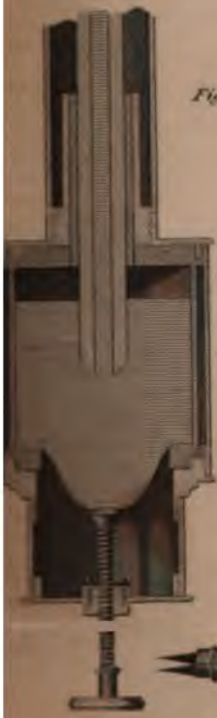


Fig. 13.

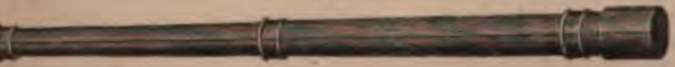


Fig. 15.

London, Published by Thomas Tegg, 73 Cheapside.

J. Shury sculp.

igher, it is attached to the stand by a ring, in which the frames turn round with a smooth and teady motion, for the purpose of placing the intrument in the best light for reading off, &c. The actually divided scale commences at about ifteen inches above the zero, and is continued as igh as thirty-three inches; and, by the usual elp of a vernier, is subdivided down to ·001 of n inch. A longitudinal slit, from end to end of he divided part, exposes to view the glass tube nd mercury within it. The whole of this part onsists of two tubes of brass: in the inside of he interior one, slides a cylindrical piece, and on his is divided the vernier scale, the index to which is the lower end of the piece. In taking he height of the mercury, this piece is brought own so as just to exclude the light from passing etween itself and the spherical surface of the ercury. The screw at top, although but a short ne, performs this office in whatever part of the cale the vernier piece may be; for it acts upon he interior long tube, in the inside of which the iece is sustained by friction, and in which it is, n every occasion, to be set by hand nearly. The tripod is altogether similar to what Mr. Ramsden used for the same purpose, as far back s the year 1775. It affords when closed, fig. 15, a safe and convenient packing-case for the nstrument: the structure of the staff head is curious: the principal part is a circle fig. 16, about ·75 of an inch broad, joined in three pieces; these, although they seem in principle to be incapable of motion, yet, in practice, produce what is fully adequate to the purpose. The three joint-pins extend inwards, so as to pass through a circular rim, which they hold fast; within this rim is hung a similar one, by two pivots; and, nside the latter, at right angles to the pivots, are astened two *y's*, or angles, in which the barometer hangs by its gudgeons. Thus are brought bout, in a small compass, the means of exnding the legs, of turning the instrument bout in the tripod, and an universal joint, hereon it readily places itself perpendicular to e horizon.

The importance of these instruments at sea, here every real indication of the approaching eather must be important, early suggested a MARINE BAROMETER, first invented by Dr. Hooke. t is contrived so as not to be affected or injured by he motion of a ship. His contrivance consisted f a double thermometer, or a couple of tubes alf filled with spirit of wine; the one sealed at oth ends, with a quantity of air included; the ther sealed at one end only. The former of hese is affected only by the warmth of the air; ut the other is affected both by the external armth and by the variable pressure of the atosphere. Hence, considering the spirit thermometer as a standard, the excess of the rise or all of the other above it will show the increase or crease of the pressure of the atmosphere. This strument is described by Dr. Halley, in the hil. Trans. No. 269, where he says, 'I had ne of these barometers with me in my late outhern voyage, and it never failed to prognoscate and give early notice of all the bad weather e had, so that I depended thereon, and made rovision accordingly; and from my own expeience I conclude, that a more useful contrivance hath not for this long time been offered for the benefit of navigation.' Mr. Nairne, an artist of London, invented another kind of Marine Barometer, having the lower part of the tube, for about two feet long, made very small, to check the vibrations of the mercury, which would otherwise arise from the motions of the ship. This was also assisted by being hung in gimbals, by a part which subjects it to be the least affected by such motions. It was constructed for the use of Captain Phipps in his celebrated vôyage to the North Pole. A marine barometer has also been invented by M. Passemente, an ingenious artist of Paris. This contrivance consists only in twisting the middle of the tube into a spiral of two revolutions; by which contrivance the impulses which the mercury receives from the motions of the ship are destroyed, by being transmitted in contrary directions.

TROUGHTON'S MARINE BAROMETER may be considered the best, perhaps, at present known. The upper part of the tube here is four-tenths of an inch diameter, and the smaller part only one-fiftieth; and, to counteract more effectually the effects of the ship's motion, the instrument, like the above, is suspended in gimbals, as shown in figs. 17 and 18. The whole is attached to the side of the cabin by two brass tubes, which slide one within the other, and render the instrument capable of being suspended at different distances from the place of support; that the bottom of it may not strike the side of the cabin during any heavy rolling of the vessel, the inner tube carries the gimbal. The external frame of the barometer is a cylindrical tube of wood, on which the brass sockets slide; and in this is inserted the innermost pair of pivots, or universal joint, which furnishes the instrument with a movable point of suspension. The top is terminated with a brass ball, of a weight nearly equal to that of the mercury, &c. at the lower end. With respect to the position of the point of suspension, no general rule can be given applicable to every case, though it is a circumstance on which the oscillations of the mercury greatly depends; it is indeed obvious, that, though this point were accurately determined for one particular height of the mercury, it would not correspond with every other. By this ingenious contrivance of the counterpoise to the weight of the mercury, the centre of gravity of the whole will be about the middle; and if the instrument were of the same specific gravity throughout, the point of suspension that would produce the smallest oscillation, would be about one-third of the length of the instrument from the top, considering the lower part as a fixed point; but as this is not strictly the case, the point of suspension is best ascertained by experiment. The graduation is on two scales of ivory, about four inches long, for the reception of which two opposite quarters of the cylindrical frame are sunk through that length, their planes pointing towards the centre of the tube, and the index is very light, and slides on the glass tube, without touching any other part. At the bottom is the usual screw, which, pressing up the leather bag, prevents the mercury from oscillating when the instrument is removed. For an instrument of this kind, lately invented by Mr. Adie, see SYMPIESOMETER.

Among barometers, or baroscopes, might be ranked a weather instrument to ascertain the variation of the atmosphere, by the sound of a wire, mentioned by M. Lazowski in his Tour through Switzerland, and discovered by accident. A clergyman, who was near-sighted, often amused himself with firing at a mark, and contrived to stretch a wire so as to draw the mark to him to see how he had aimed. He observed that the wire sometimes sounded as if it vibrated like a musical chord; and that after such soundings a change always ensued in the state of the atmosphere; from whence he came to predict rain or fine weather. On making farther experiments, it was found that the sounds were most distinct when extended in the plane of the meridian. According to the weather which was to follow, the sounds were more or less soft, or more or less continued. Fine weather was announced by the tones of counter-tenor, and rain by those of bass. It has been said that M. Volta mounted fifteen chords in this way at Pavia, to bring this method to some precision, but no accounts have appeared of his success.

Marine barometers are now generally used on board all ships of war and Indiamen. To facilitate the keeping of a register of barometrical observations, Mr. Horsburgh, hydrographer to the East India Company, has lately published a set of engraved ruled sheets, adapted for the convenience of navigators. In these plates the height of the mercury, from twenty-seven to thirty-one inches, is represented in inches and tenth parts, by horizontal lines; while each successive day has a space apportioned to it by vertical bars. The state of the barometer at every observation is marked with a dot; and these dots being afterwards connected together, exhibit an irregular waved line, stretching across the sheet, and indicating the series of the changes of the weather. At the lowest points, from which the curve again returns, a gale generally follows. From the observations made off the Cape of Good Hope, during the month of May 1815, by Captain Basil Hall, of his Majesty's sloop Victor, it appears that whenever the mercury fell to 29·60 inches, a storm always ensued; the column always rose when the gale abated, and when it reached near thirty inches, the weather became fair. Those gales often came on suddenly, without any visible change in the aspect of the sky, but the marine barometer never failed to give warning of their approach.

The following observations, upon the movements and state of the mercury in the marine barometer, were made by Captain Flinders, of his majesty's ship Investigator, during his examination of the coasts of New Holland and New South Wales, the Terra Australis of the earlier charts, in the years of 1801, 1802, and 1803. Phil. Trans. 1806, Part. 2. The barometer, with which these observations were made, was constructed by Nairne and Blunt, and had been used in Captain Cook's voyages. The height of the mercury was taken regularly at day-break, at noon, and at eight o'clock in the evening The temperature of the thermometer was also registered at the same periods. The circumstances that led Captain Flinders to think his observations worth attention were, the coincidence that took place between the rising and falling of the mercury, and the setting in of wind that blew from the sea and from off the land, to which there seemed to be at least as much reference as to the strength of the wind, or the state of the atmosphere. Among the examples selected from the captain's journals, are nine that relate to the south coast; from these it appears, generally, that a change of wind from the northern, to any point in the southern half of the compass, caused the mercury to rise, and a contrary change, to fall; and that the mercury stood considerably higher when the wind was from the south side of east and west, than it did in similar weather when the wind came from the north side. The cause of this appears to be, that the first proportion of air brought in from the sea, is impelled upwards by the land which it encounters, and along the inclined surface of the land, in a sloping direction: the next portion is, in the same manner, stopped and forced upwards; but it has a shorter space to pass through, because the former portion goes along two of the sides, and the latter along the third side of an obtuse-angled triangle: thus, the succeeding portions of air meet the summit of land before the first portions, and cause the latter to eddy and stagnate; while the stream blowing above this portion, compresses it, and augments its density, whence the increased height of the barometer.

'The barometer,' says Captain Flinders, 'was of great service to me in the investigation of this dangerous part of the east coast, where the ship was commonly surrounded with rocks, shoals, islands, or coral reefs. Near the main land, if the sea-breeze was dying off at night, and the mercury descending, I made no scruple of anchoring near the shore, knowing that it would either be a calm, or a wind would come off from the land; but if the mercury kept up, I stretched off, in the expectation that it would freshen up again in a few hours. Amongst the barrier-reefs, when the wind was dying away, the barometer told me, almost certainly, from what quarter it would next spring up. If the mercury stood at 30° 15′ or near it, and was rising, I expected the proper trade wind; and if higher, that it would be well from the southward, or would blow fresh; and, if it was up to 30° 30′ both. The falling of the mercury to 30° 10′ was an indication of a breeze from the north-eastward; and its descent below thirty inches, that it would spring up, or shift round to the westward.' Hence, it appears, that this skilful commander navigated his vessel throughout those dangerous parts of the eastern coast that are between the latitudes of 23° and 17°, pursuant to a confident deduction from his own theory.

Dr. Halley's Rules for judging of the weather by Barometers.—I. In calm weather, when the air is inclined to rain, the mercury is commonly low. II. In serene, good, and settled weather, the mercury is generally high. III. Upon very great winds, though they be not accompanied with great rain, the mercury sinks lowest of all, according to the point of the compass the wind blows from. IV. The greatest heights of the mercury are found upon easterly or north-easterly winds, other circumstances alike. V. In calm frosty weather, the mercury [illegible] tands high. VI. After very great storms of wind, when the mercury has been very low, it generally rises again very fast. VII. The more northerly places have greater alterations of the barometer than the more southerly, near the equator. VIII. Within the tropics, and near them, there is little or no variation of the barometer, in all weathers. For instance, at St. Helena it is little r nothing, at Jamaica three-tenths of an inch, nd at Naples the variation hardly ever ex-eeds an inch; whereas in England it amounts two inches and a half, and at Petersburgh to nearly.

Mr. Rowning justly remarks, that it is not so uch the absolute height of the mercury in the be that indicates the weather, as its motion up d down, and therefore, to pass a right judg- ent of what weather is to be expected, we ght to know whether the mercury is actually ing or falling; to which end the following les are of use. I. If the surface of the mer- ry is convex, standing higher in the middle of e tube than at the sides, it is a sign that the ercury is then rising. II. But if the surface concave, or hollow in the middle, it is then king. And, III. If it be plain, or rather a ry little convex, the mercury is stationary; for ercury being put into a glass tube, especially small one, naturally has its surface a little nvex, because the particles of mercury attract e another more forcibly than they are attracted glass. IV. If the glass be small, shake the be; then if the air be grown heavier, the mer- ry will rise about half a tenth of an inch gher than it stood before; but if it be grown hter, it will sink as much. And, it may be ded, in the wheel or circular barometer, tap instrument gently with the finger, and the lex will visibly start forwards or backwards cording to the tendency to rise or fall at that ne. This proceeds from the mercury's sticking the sides of the tube, which prevents the motion of it till it be disengaged by the ck; and therefore, when an observation is to made with such a tube, it ought to be first ken; for sometimes the mercury will not vary its own accord, till the weather is present ich it ought to have indicated.

VARIATIONS OF THE BAROMETER. Several mbers of a German meteorogical society have istered observations upon the barometer. The st noted of those observers are, Steilehner, aner, Chiminello, and Hemmer.

The first of these gentlemen says, that he nd, by several comparative observations, that greatest fall of the barometer does not happen very remote places at the same time; but that is earlier towards the west, and later towards east; and that the difference of the time is rly equal to the difference of the meridians the places; an assertion which deserves to be urately examined.

M. Planer observed the barometer for a whole ar, six times every day, viz. at two, six, and ten lock in the morning, and at the same hours in afternoon; and found, in general, that the ometer, between ten in the morning and two the afternoon, and between ten at night and in the morning, was less in its rising, and ater in its fall; and that the contrary was the case between the hours of six and ten in the evening and morning.

Chiminello observed the barometer twenty-two times a day, for three years, but he left a chasm in the night, which he supplied by calculation. The principal positions which he then deduced are, that the barometer falls towards noon, as well as towards midnight.

Hemmer deduced the three following general rules from a great number of accurate observations: 1. When the sun passes the meridian, the barometer, if in the act of falling, continues to fall, and the falling is accelerated. 2. When the sun passes the meridian, the barometer, if in the act of rising, falls, or becomes stationary, or rises more slowly. 3. When the sun passes the meridian, the barometer, which is stationary, falls, if it has not risen before or after being stationary; in which case it usually becomes stationary during the sun's passage.

From a register kept by a Mr. Dunbar, near the banks of the Mississippi, in N. lat. 31° 28′, we find that, for the space of about four days before, and six days after, the summer solstice, the barometer regularly rises from nine P. M. to about six A. M. then falls till the return of the former hour in the evening, then rises again as before, &c. in alternate periods. In the first four days the direction is ascending, and the elevation of a line drawn through the mean is about $\frac{6}{100}$ of an inch. In the latter six days the mean line is perfectly horizontal, the elevation each night amounting to $\frac{7}{100}$, and the depression each day to the same, but occupying double time.

The celebrated Humboldt made some interesting observations at Caraccas, in South America, near the equator. There are, he says, four atmospherical tides every twenty-four hours, which depend only on the attraction of the sun. The mercury falls from nine in the morning to four in the evening: it rises from four to eleven o'clock: it falls from eleven o'clock till past four in the morning: and it re-ascends from that time till nine o'clock. Neither winds, storms, nor earthquakes, have any influence on this motion.

Horsburgh, in his last voyage to Bombay, employed two marine barometers, one made by Troughton, and the other by Ramsden; with which he made very minute observations; which were published in the second part of the Phil. Trans. for 1805; and in the Hist. Roy. Soc. Edin. of the same year, we have a comparison of the diurnal variations of the barometer, made in Peyrouse's voyage round the world, with those made at Calcutta, by Dr. Balfour.

The agreement between these observations seems very remarkable. Dr. Balfour found that, during the whole lunation, in which he observed the barometer from half hour to half hour, the mercury constantly fell from ten at night to six in the morning; from six to ten in the morning it rose; from ten in the morning to six at night it fell again; and, lastly, rose from six to ten at night. The maximum height is, therefore, at ten at night and ten in the morning; and the minimum at six at night and six in the morning. The only difference is, that in M. Lamanon's observations, the minimum is stated to have happened at about four instead of six. This, however, will not seem a very material difference, when it is remembered, that the instant when any quantity attains either its greatest or its least state is not easily ascertained with precision. From the observations, as detailed by M. Lamanon, the time of the minimum seems to answer fully as well to five as to four; so that the difference of the results is in every view inconsiderable, and their coincidence on the whole not a little singular. The variation in Dr. Balfour's barometer between the nearest maximum and minimum is sometimes about $\frac{1}{10}$ of an inch, though, in general, considerably less.

Many hypotheses have been advanced to explain the cause of the variations of the barometer. The various and often imaginary effects of vapors of heat and winds have been employed in framing an explication of the changes of the atmosphere. The fact that the mercurial column generally falls before rain, seemed at complete variance with the intimation of the senses; it being a notion universally prevalent, that the air is heavier when the sky appears lowering and overcast; another proof, if it were wanted, how fallacious are all current opinions in matters of science.

Leibnitz endeavoured, by a sort of metaphysical argument, to demonstrate that, though a body adds its own weight to the pressure of a fluid in which it is suspended, yet it will cease to be ponderous in the act of falling. This alleged principle will not, in the actual state of science, be thought to require any serious refutation. Dr. Halley thought the winds and exhalations sufficient to account for these variations; and on this principle gives a theory, the substance of which may be comprised in what follows: 1st That the winds must alter the weight of the air in any particular country; and this, either by bringing together a greater quantity of air, and so loading the atmosphere of any place, which will be the case as often as two winds blow from opposite parts, at the same time, towards the same point; or by sweeping away some part of the air, and giving room for the atmosphere to expand itself, which will happen when two winds blow opposite ways from the same point at the same time: or lastly, by cutting off the perpendicular pressure of the air, which is the case when a single wind blows briskly any way; it being found by experience, that a strong blast of wind, even made by art, will render the atmosphere lighter: and hence the mercury in a tube below it, as well as in others more distant, will considerably subside. See Phil. Trans. No. 292. 2dly, That the cold nitrous particles, and even the air itself condensed in the northern regions, and driven elsewhere, must load the atmosphere, and increase its pressure. 3dly, That heavy dry exhalations from the earth must increase the weight of the atmosphere, as well as its elastic force: as we find the specific gravity of menstruums increased by salts and metals dissolved in them. 4thly, That the air being rendered heavier by these and the like causes, is thence better able to support the vapors; which being likewise intimately mixed with it, make the weather serene and fair. Again the air being made lighter from the contrary causes, it becomes unable to support the vapors with which it is replete; these therefore precipitating, are collected into clouds, the particles of which in their progress unite into drops of rain. Hence he infers, that the same causes which increase the weight of the air, and render it more able to support the mercury in the barometer, likewise produce a serene sky, and a dry season; and that the same causes which render the air lighter, and less able to support the mercury, likewise generate clouds and rain.

Dr. James Hutton, in his Theory of Rain, printed in the Transactions of the Royal Society of Edinburgh, vol. 1, gives ingenious and plausible reasons for thinking that the lessening the weight of the atmosphere by the fall of rain, is not the cause of the fall of the barometer, but that the principal, if not the only cause, arises from the commotions in the atmosphere, which are chiefly produced by sudden changes of heat and cold in the air. The barometer, says he, is an instrument necessarily connected with motions in the atmosphere; but it is not equally affected with every motion in that fluid body. The barometer is chiefly affected by those motions by which they are produced, accumulations and abstractions of this fluid, in places or regions of sufficient extent to affect the pressure of the atmosphere upon the surface of the earth. But as every commotion in the atmosphere may, under proper conditions, be a cause for rain, and as the want of commotion in the atmosphere is naturally a cause of fair weather, this instrument may be made of great importance for the purpose of meteorological observations, although not in the certain and more simple manner in which it has been with the increase of science, so successfully applied to the measuring of heights. See Rain.

Hauksbee's celebrated experiment has been quoted as confirming the theory of Dr. Halley. That ingenious experimentalist, about the year 1704, placed two barometers, about three feet asunder, with their naked cisterns in two close square wooden boxes, connected by a horizontal brass pipe; one of these boxes had, inserted at right angles, an open pipe on the one side, and a second pipe, terminating in a screw, on the other side; to this end he adapted a strong globular receiver of about a foot in diameter, which had been charged, by injection from a syringe, with three or four atmospheres; then suddenly opening the stop-cook, and giving vent for the escape of the air through the box and over the surface of the included cistern the mercury sunk equally in both barometers more than two inches. This experiment might be deemed entirely conclusive, if a minute circumstance, on which its success depends, had not unfortunately been overlooked. It will be perceived from the inspection of the figure which Hauksbee has given, that the exit pipe of the box was considerably wider than the pipe which conveyed into it the stream of air. This fluid, escaping from compression, would, therefore, be carried by its elasticity as much beyond the state of equilibrium; while the width of the outlet, by facilitating its emission, would allow the portion occupying the box and the connected reservoir to preserve its acquired expansion. If the pipe of discharge from the box had been

ower than the other, an opposite effect must
taken place; for the air accumulated over
istern, not finding a ready vent, would remain
state of condensation. This fact is a remark-
indication of the great delicacy required
rforming such experiments.

e same result, however, can be exhibited by
ry simple apparatus. Let a small box, or
r a glass ball, have a short narrow tube
ted in the one side, and another wide tube
site to this, with a cross slider of brass, for
acting the orifice at pleasure; and, to the
r part of the ball, join a long perpendicular
bent back like a syphon to more than half
ight and containing a double column of
. Now, blow through the narrow tube into
vity of the ball, while the orifice of emission
ite opened, and the liquor will rise several
s in a long stem; but, still continuing the
, let the orifice be gradually contracted, and
olumn will first descend to its ordinary level,
then sink considerably below it.

is clear that the fall and rise of the mercury
e barometer must evidently be occasioned
me corresponding reduction or accumulation
e atmosphere at the place of observation.
tever augments the elasticity of the air will
part of the incumbent fluid to evade and
for the time a diminished vertical pressure.
efflux of wind might also produce a tempo-
reduction of the atmospheric column. But
eal difficulty consists in explaining why the
tions of the barometer should be greater in
igh latitudes than between the tropics, and
they so much exceed in all cases the quantities
h calculation might assign. On the whole,
present state of physical science presents
ing but a series of conjectures on this subject.
augmented elasticity communicated to the
by the action of heat or the presence of hu-
ity, and the reduction of the incumbent mass
the efflux of winds, have doubtless each their
inct influence, in disturbing the equilibrium
the atmospheric ocean. But the effects, par-
larly in the high latitudes, much surpass the
lar operation of those causes. The only
le, perhaps, of removing the difficulty, is to
into consideration the comparative slowness
h which any force is propagated through the
body of atmosphere. An inequality may
tinue to accumulate in one spot, before the
nterbalancing influence of the distant portions
he aërial fluid can arrive to modify the result.
he higher latitudes, the narrow circle of air
may be considered as, in some measure, insulated from the expanded ocean of atmosphere, and hence, perhaps, the variations of the barometer are concentrated there, and swelled beyond the due proportion.

The use and application of barometers in measuring altitudes, has of late attracted more of the attention of philosophers than their faculty of indicating the weather. As before observed, this use of the instrument was first proposed by Pascal and Descartes. Succeeding philosophers have been at great pains to ascertain the proportion between the fall of the barometer and the height to which it is carried; as Halley, Mariotte, Maraldi, Scheuchzer, J. Cassini, D. Bernoulli, Horrebow, Bouguer, Shuckburgh, Roy, and more especially De Luc, who has given a critical and historical detail of most of the attempts, that have at different times been made, for applying the motion of the mercury in the barometer to the measurement of accessible heights. We have noticed the researches of Dr. Halley and De Luc, who introduced the corrections of the columns of mercury and air, on account of heat. The following rules for computing heights (the principles of which the reader will find explained under PNEUMATICS,) are given by Dr. Maskelyne, in his Introduction to Taylor's Tables of Logarithms. The altitudes of the barometer at two stations, with the heights of Fahrenheit's thermometer attached to the barometer, and the heights of two thermometers of the same kind, exposed to the air but sheltered from the sun, at the two stations being given, to find the perpendicular altitude of the one station above the other?—Put B for the observed height of the barometer at the lower station, and b for that at the upper station, D for the difference of heights of Fahrenheit's thermometer attached to the barometer at the two stations, and F for the mean of the two heights of Fahrenheit's thermometer, exposed freely for a few minutes to the open air, in the shade at the two stations. The altitudes of the upper station above the lower, in English fathoms, will be expressed as follows, according to the respective observations of M. de Luc, the late General Roy, and Sir George Shuckburgh, in which the upper sign — is to be used when the thermometer attached to the barometer is highest at the lower station, (which is most usual,) and the lower sign + when it is lowest at the lower station.

M. De Luc . . . . . $\overline{\text{Log. } B - \text{Log. } b \mp 0{\cdot}452\, D} \times \overline{1 + F - 40^\circ} \times 0{\cdot}00223.$

General Roy . . . . $\overline{\text{Log. } B - \text{Log. } b \mp 00{\cdot}468\, D} \times \overline{1 + F - 32^\circ} \times 0{\cdot}00245.$

Sir G. Shuckburgh . . $\overline{\text{Log. } B - \text{Log. } b \mp 0{\cdot}440\, D} \times \overline{1 + F - 32^\circ} \times 0{\cdot}00243.$

Mean of the two last . $\overline{\text{Log. } B - \text{Log. } b \mp 0{\cdot}454\, D} \times \overline{1 + F - 32^\circ} \times 0{\cdot}00244.$

bservations of General Roy and Sir George
kburgh having been made with barometers
thermometers constructed and accurately di-
vided by Mr. Ramsden, and with the detached thermometers never exposed to the sun, appear clearly to deserve the preference above those of

M. de Luc. The last of the above rules, which is a mean between those of General Roy and Sir George Shuckburgh, may be expressed in words at length, as follows: take the difference of the tabular logarithms of the observed heights of the barometer at the two stations, considering the four first figures, exclusive of the index, as whole numbers, and the remaining figures to the right as decimals, and subtract or add $\frac{454}{1000}$ of the difference of altitude of Fahrenheit's thermometer, attached to the barometer at the two stations, according as it was highest at the lower or upper station; thus the height of the upper station above the lower in English fathoms, will be found nearly; to be corrected as follows:—Multiply the height found nearly by the difference between the mean of the two altitudes of Fahrenheit's thermometer exposed to the air of the two stations and 32°, and by the decimal fraction 0·00244; the product will be the correction of the approximate height, which added to, or subtracted from the same, according as the mean of the two altitudes of Fahrenheit's thermometer exposed to the air was higher or lower than 32°, will give the true height of the upper station above the lower in English fathoms; which multiplied by 6, will give the true height in English feet.

Example. Let the state of the barometers and thermometers be as follows, to find the altitude.

Thermometers.		Barometers.
Detached.	Attached.	
57	57	29·68 lower.
42	43	25·28 upper
Mean 49½	Diff. 14	

Heights.	Log.
29·68	4724·639
25·28	4027·771

from 696·868

Subtract $\frac{454}{1000} \times 14 =$ 6·356

Height nearly = 690·512

Multiply by 49½—32 = 17½

Height nearly = 690·512

Product = 21083·960

Multiply by ·00244

Correction = 29·485

Height nearly = 690·512

Correct height in fathoms = 719·997

Professor Playfair, in a learned paper, printed in the first volume of the Transactions of the Royal Society of Edinburgh, has examined all the circumstances which can affect barometrical measurements, with his usual correctness and perspicuity. La Place resumed the subject in his Mecanique Celeste, and brought all the conditions together in a very complicated formula, to which we have before alluded. Such an appearance of extreme accuracy, however, is perhaps to be regarded rather as a theoretical illusion, than a view of results founded on the real state of practice. Biot also, in attempting to arrive at a similar conclusion, confines himself to the same remark. He sets out à priori from some careful experiments on the relative density of air and mercury, performed by him in conjunction with Arago. He thence infers, that in the latitude of Paris, and at the point of congelation, air, under a mercurial pressure of 76 metres, or 29·922 English inches, is 10,463 times lighter than mercury at the temperature of water at its lowest contraction. This would give 26·090 feet for the height of a column of homogeneous fluid, whose pressure is equivalent to the elasticity of the atmosphere. The coefficient adapted to common logarithms, and adjusted to the force of attraction at the level of the sea, would therefore be 60,148 feet, or 18,334 metres; scarcely differing sensibly from the quantity which Ramond had deduced from a very numerous set of experiments made by him on the Pyrenees. But Biot prefers, as the coefficient, the number 18,993, answering for an elevation of 1200 metres, or about 4000 feet above the sea, which is not far from the general level of such observations. The formula is hence, in English feet,

$$60{,}346\ (1 + \cdot 002837 \cos. 2\psi)\left(1 + \frac{2(T+t)}{1000}\right) \log. \frac{H}{h};$$

where ψ denotes the latitude of the place, T and t the temperatures of the air at the two stations, as indicated by the centesimal thermometer, and H and h the heights of mercurial columns corrected for the effects of heat.

This writer has likewise given tables for expediting the calculation of barometrical measurements; in which he was anticipated, however, by Oltmans of Berlin, who published, in 1809, large Hypsometrical Tables, as they are called, accommodated to the complex formula of La Place. Such tables might, no doubt, prove useful where very frequent computations are wanted, as in the case of the reduction of the numerous observations brought home by Baron Humboldt, for which, indeed, they were first designed. But still they contain a needless profusion of figures, and hold forth a show of extreme accuracy which the nature of the observations themselves can never justify. By barometrical admeasurements, principally scientific, travellers have of late years been able to form vertical sections of different countries, which contribute further to our knowledge of their geological character than any previous mode of delineation. Thus Humboldt, in his Geography of Plants, gives a section across the American continent, one of the best and most interesting that has yet appeared. It consists, in fact, of four combined sections, traversing through an extent of 425 miles. The line begins at Acapulco on the shore of the Pacific Ocean, and runs 195 miles, about a point of the compass towards the east of north, to the city of Mexico; then eighty miles, a point to the south of east, to La Puebla de los Angeles; again it holds a north-east direction of seventy miles, to the Cruz Blauca; and finally bends eighty miles east by south, to Vera Cruz, on the coast of the Atlantic. A scale of altitudes is annexed, which shows the vast elevation of the table-land at Mexico.

This mode of distant levelling has originated also a very interesting discovery, recently made by Engelhardt and Parrot, two Prussian tra-

a another quarter of our globe; they pro-
l, on the 13th of July, 1814, from the
of the Kuban, at the island of Taman, on
lack Sea; and, examining carefully every
e state of the barometer, they advanced
fifty-one 'observations, the distance of 990
, or 711 English miles, to the mouth of the
, on the margin of the Caspian Sea. Si-
observations were repeated and multiplied
ir return. From a diligent comparison of
hole, it follows that the Caspian is 334
h feet below the level of the Black Sea.
he Caspian really occupies a lower level
he ocean, had been suspected before, from
parison of some registers of barometers kept
Petersburgh, and on the borders of that
sea; but the last observation places the
on beyond all doubt. It farther appears,
ithin 250 versts, or 189 miles, of the Cas-
the country is already depressed to the level
ocean, leaving, therefore, an immense
from which the waters are supposed to
etired by a subterranean percolation.

subjoin a table of the altitude of some of
ost remarkable mountains, &c. on the earth
the surface of the ocean:—

		Eng. feet.
t Puy de Dome in Auvergne, the t mountain measured by the baro- ter		5088
t Blanc	Alps	15662
e Rosa		15048
lle d'Argentiere		13402
stery of St. Bernard		7944
t Cenis		9212
e los Reyes	Pyrenees	7620
u Midi		9300
'Ossano		11700
gou		8544
of Geneva		1232
t Ætna		10954
t Vesuvius		3938
t Hecla in Iceland		4887
don		3555
Moir		3723
Lawers		3858
Gloe		3472
allion		3461
Lomond		3180
		2342
Hill, Cape of Good Hope		3454
ar, city in Abyssinia		8440
s of the Nile		8082
f Teneriffe		14026
boraço		19595
mbouro		19391
ana		19290
ncha		15670
of Quito		9977

e mean height of the barometer in London,
an average of two observations in every
f the year, kept at the house of the Royal
ty, for many years past, is 29·88; the me-
temperature, or height of the thermometer,
ding to the same, being 58°. But the me-
height at the surface of the sea, according
George Shuckburgh, (Phil. Trans. 1777.
.) is 30·04 inches, the heat of the thermome-
ing 55°, and of the air 62°.

BAROMETRICAL PHOSPHORUS. See PHOSPHORUS.

BA'RON,
BA'RONAGE,
BA'RONESS,
BA'RONET,
BA'RONIAL,
BARONY.

Fr. *baron*; Ital. *barone*; Sp. *baron*. See to BAR. *Bairgan*, to arm; to defend; to strengthen. The etymology of this word is very uncertain. *Baro*, among the Romans, signified a brave warrior, or a brutal man; and, from the first of these significations, Menage derives *baron*, as a term of military dignity.—Others suppose it originally to signify only a man, in which sense *baron* or *varon*, is still used by the Spaniards; and, to confirm this conjecture, our law yet uses *baron* and *femme*, husband and wife. Others deduce it from *ber*, an old Gaulish word, signifying commander; others from the Hebrew נבר, of the same import. Some think it a contraction of *par homme*, or *peer*, which seems least probable. Allowing the derivation to be from *bairgan*, which is the suggestion of Tooke, then the simple idea of *baron* is a man of power, armed and surrounded with abundant means of defence. This generally implies rank; and *baron* is a title of nobility, it is likewise a name of office.

> When loue has told herr his extent
> The *baronage* to counsaile went,
> In many sentences they fill,
> And diuersly they saied her will.
>
> *Chaucer. Romaunt of the Rose*.

> My lord, I'll tell you what,—
> If my young lord, your son, have not the day,
> Upon mine honour for a silken point
> I'll give my *barony*. *Shakspeare.*

> Where throngs of knights and *barons* bold
> In weeds of peace high triumph hold,
> With store of ladies, whose bright eyes
> Rain influence, and judge the prize
> Of wit or arms, while both contend
> To win her grace whom all commend. *Milton.*

Sir Edward Walker, garter and secretary of war to King Charles the First, observes, 'That in all Queen Elizabeth's forty-four years reign, she created but six earls and eight or nine *barons*.'

Oldys' Life of Sir Walter Raleigh.

The second was the *baronage*, the nobility and gentry who held their *baronies* of the king, and the third was the boroughs, who held of the king by *barony*, though in a community; so that the parliament was truly the *baronage* of the kingdom. The lesser *barons* grew weary of this attendance.

Burnet. History of his own Times.

> Coffee (which makes the politician wise,
> And see thro' all things with his half shut eyes)
> Sent up in vapours to the *baron's* brain
> New stratagems the radiant lock to gain. *Pope.*

> Here might you see
> *Barons* and peasants on the embattled field,
> Slain or half dead, in one huge ghastly heap
> Promiscuously amassed. *Philips's Cider*, b. ii.

The title of *baronet*, invented by Salisbury, was sold; and two hundred patents of that species of knighthood were disposed of for so many thousand pounds. *Hume. History of England. King James Ist.*

A *baron* is the most general and universal title of nobility; for originally every one of the peers of superior rank had also a *barony* annexed to his other titles. But it hath sometimes happened, that when an ancient *baron* hath been raised to a new degree of peerage, in the course of a few generations the two titles have descended differently. *Blackstone's Commentaries.*

Baron (Robert), a dramatic author, who lived during the reign of Charles I. and the protectorship of Oliver Cromwell. He was educated at Cambridge, after which he became a member of the society of Gray's Inn. During his residence at the university he wrote a novel, called the Cyprian Academy, in which he introduced the first two of the dramatic pieces mentioned below. The third of them is a much more regular and perfect play, and was probably written when the author had attained a riper age. Their names are, 1. Deorum Dona, a masque. 2. Gripus and Hegio, a pastoral. 3. Mirza, a tragedy. Mr. Baron was intimate with the celebrated Mr. James Howell, the traveller, in whose collection of letters there is one to this gentleman, vol. iii. let. 418, who was then at Paris. To Mr. Howell, and the ladies and gentlewomen of England, he dedicated his romance.

Baron. This title in ancient records was applied to all the nobility of England, because regularly all noblemen were barons, though they had also a higher dignity. But it has sometimes happened, that when an ancient baron has been raised to a new degree of peerage, in the course of a few generations the two titles have descended differently; one perhaps to the male descendants, the other to the heirs general; whereby the earldom or other superior title has subsisted without a barony: and there are also modern instances, where earls and viscounts have been created without annexing a barony to their other honors: so that now the rule does not hold universally that all peers are barons. The origin and antiquity of barons has occasioned great enquiries among antiquaries. The most probable opinion is, that they were the same with our present lords of manors. It is said the original name of this dignity in England was vavassour, which by the Saxons was changed into thane, and by the Normans into baron. It may be collected from king John's magna charta, that originally all lords of manors, or barons, had seats in the great council of parliament; but such is the deficiency of public records, that the first precept to be found is of no higher date than the 49 Henry III. which, although it was issued out in the king's name, was neither by his authority nor by his direction: for the king himself, his son prince Edward, and most of the nobility who stood loyal to him, were then prisoners in the hands of the rebellious barons; having been taken in May preceding, at the battle of Lewes, and so continued until the battle of Evesham, in August the year following; when, by the escape of prince Edward, he rescued the king and his adherents out of the hands of Simon Mountford, Earl of Leicester. It cannot be doubted, but that several parliaments were held by Henry III. and Edward I. yet no record is to be found, giving any account of them, except the fifth of Edward I. until the twenty-second year of that king's reign.

Before the 49 Henry III. the ancient parliaments consisted of the archbishops, bishops, abbots, earls, and barons. Of these barons there were two sorts; the greater barons, or the king's chief tenants, who held of him in capite by barony; and the lesser barons, who held of the first by military service in capite. The former had summons to parliament by several writs; and the latter (i. e. all those who were possessed of thirteen knight's fees and a quarter) had a general summons from the sheriff in each county. Thus things continued till the 49 Henry III. when, instead of keeping to the old form, the prevailing powers thought fit to summon, not all, but only those of the greater barons who were of their party; and, instead of the lesser barons who came with large retinues, to send their precepts to the sheriff of each county to cause two knights in every shire to be chosen, and one or two burgesses for each borough, to represent the body of the people residing in those counties and boroughs; which gave rise to the separation into two houses of parliament. By degrees the title came to be confined to the greater barons, or lords of parliament only; and there were no other barons among the peerage but such as were summoned by writ, in respect of the tenure of their lands or baronies, till Richard II. first made it a mere title of honor, by conferring it on divers persons by his letters patent.

Barons by ancient tenure, were those who held certain territories of the king, who still reserved the tenure in chief to himself. We also read of barons by temporal tenure; who are such as hold honors, castles, manors, as heads of their barony, that is, by grand serjeantry; by which tenure they were anciently summoned to parliament. But at present a baron by tenure is no lord of parliament, till he be called thither by writ. The barons by tenure, after the conquest, were divided into majores and minores, and were summoned accordingly to parliament; the majores, or greater barons, by immediate writ from the king; the minores, or lesser barons, by general writ from the high sheriff, at the king's command. Anciently they distinguished the greater barons from the less, by attributing high, and even sovereign jurisdiction, to the former, and only inferior jurisdiction over smaller matters to the latter.

When a baron is called up to the house of peers by writ of summons, the writ is in the king's name, and he is directed to come to the parliament appointed to be held at a certain time and place, and there to treat and advise with his majesty, the prelates, and nobility, about the weighty affairs of the nation. The ceremony of his admission into the house of peers is this: He is brought into the house between two barons, who conduct him to the Lord Chancellor, his patent or writ of summons being carried by a king-at-arms, who presents it kneeling to the Chancellor, who reads it, and then congratulates him on his becoming a member of the house of peers, and invests him with his parliamentary robe. The patent is then delivered to the clerk of the parliament, and the oaths are administered to the new peer, who is conducted to his seat on the barons' bench. Some barons hold their seats by tenure. The coronation robes of a baron are the same as an earl's, except that he has only two rows of spots on each shoulder. In like manner his parliamentary robes have but two guards of white fur, with rows of gold lace r respects they are the same with those r peers.

ron's coronet, in herald- gold circle, on which are rls, which were assigned ns by king Charles II. Restoration. Previously time the barons wore caps, turned up with and on the top a tassel . Though called pearls, the globes round onet are always made of silver. His cap ame as a viscount's. His style is Right able; and he is addressed by the king or Right Trusty and Well Beloved. See y.

on and Femme, in English law, husband e. They are deemed but one person; so ife cannot be witness for or against her d, nor he for or against his wife, except of high treason.

on and Femme, in heraldry, is when the arms of a man and his wife are borne e in the same escutcheon, the man's being on the dexter side, and the woman's on ister; but here the woman is supposed heiress, for then her coat must be borne husband on an escutcheon of pretence.

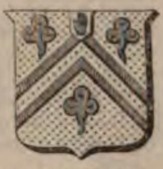
on, Lord Chief, the president of the Exchequer.

ons of the Cinque-Ports, are members house of commons, elected by the five wo for each port. Those who have been of Corfe-castle, in Devonshire, are like- led barons; and formerly the principal of London were honored with the title n. See Cinque-Ports.

ons of the Exchequer, four judges in d, and five in Scotland, to whom the ad- ation of justice is committed, in causes the king and his subjects, relating to concerning the revenue. They were y barons of the realm, but of late are ge- persons learned in the laws. Their office to look into the accounts of the king, for eason they have auditors under them. See quer.

ONAGIUM. See Barony.

onets of England. The dignity of t is given by patent. The order was d by King James I. at the suggestion of bert Cotton, in 1611, when 200 baronets reated at once; to which number it was d they should always be restrained: but w enlarged at the king's pleasure, without on. They had several considerable pri- given them, with an habendam to them eir heirs male. They were allowed to their coat with the arms of Ulster, which a field argent, a sinister hand, gules; and on condition of their defending the pro- of Ulster in Ireland against the rebels, en harassed it extremely: to which end ere each to raise and keep up thirty , at their own expense, for three years r, or to pay into the exchequer a sum nt to do it; which, at eight-pence per day ad, was £1095. So that, including fees, ense of this dignity may be about £1200 sterling. To be qualified for it, one must be a gentleman born, and have a clear estate of £1000 per annum. Baronets take place according to the dates of their patents; by the terms of which no honor is to be erected between barons and baronets. The title, Sir, is granted them by a peculiar clause in their patents, though they be not dubbed knights: but both a baronet and his eldest son, being of full age, may claim knighthood. The first English baronet was Sir Nicholas Bacon, of Redgrave, in Suffolk, whose successor is therefore styled primus baronetorum Angliæ. If a baronet be named at an installation as proxy for a knight of the Bath, it appears essential that he should be knighted for the occasion; thus Sir George Osborne, Bart. was knighted by king George III. A baronet takes precedence of all knights, except bannerets. Baronets' mark; the arms of the province of Ulster, viz. argent, a hand, gules, in a canton, or in escutcheon, are borne by every baronet, as in the annexed example. 'He beareth, or, between two chevronels, three trefoils, slipped, sable,' as in the arms of the Abdy family.



Baronets of Ireland. In Ireland, an hereditary dignity somewhat similar to knighthood, appears to have been occasionally conferred in the earliest times; and the knights of Kerry and of Glyn are yet permitted to bear distinctions bestowed on their ancestors by the ancient sovereigns of the country. The order of baronets, however, was likewise instituted here by James I. in the eighteenth year of his reign, for the same purpose, and with the same privileges within the kingdom of Ireland as he had conferred on the like order in England; for which the Irish baronets paid the same fees into the treasury of Ireland. The first of that kingdom who was advanced to this hereditary dignity was Sir Francis Blundell, then secretary for the affairs of Ireland. Several more have been added, no number being limited; but since the union in 1801, none have been created otherwise than as baronets of the united kingdom.

Baronets of Nova Scotia, and Baronets of Scotland. The order of knights baronets was also designed to be established in Scotland in 1621, by James I. for the plantation and cultivation of the province of Nova Scotia, in America; but it was not actually instituted till the year 1625, by his son Charles I. when the first person dignified with this title was Sir Robert Gordon, of Gordonstone, a younger son o the Earl of Sutherland. The king granted a certain portion of land in Acadia or New Scotland, to each of them, which they were to hold of Sir William Alexander, afterwards Earl of Stirling, for their encouragement who should hazard their lives for the good and increase of that plantation, with precedency to them, and their heirs male for ever, before all knights called equites aurati, and all lesser barons called lairds, and all other gentlemen, except Sir William Alexander, his majesty's lieutenant in Nova Scotia, his heirs, their wives and children; that the title of Sir should be prefixed to their

Christian name, and Baronet added to their surname; and their own and their eldest sons' wives should enjoy the title of Lady, Madam, or Dame. His majesty was so desirous of adding every mark of dignity to this, his favorite order, that four years after its institution, he issued a royal warrant, granting them the privilege of wearing an orange ribbon and a medal: which last was presented to each of them by the king himself, according to the words of the warrant. All the privileges of the order, particularly this of wearing the medal, were confirmed at the king's request by the convention of estates in the year 1630; and, in order to establish them on the most solid foundation, they were again confirmed by an act of the parliament of Scotland in 1633. The premier baronet of Scotland, at present, is Sir Richard Strachan; and the number of the order, exclusive of such titles as are merged in peerages, is 135. Since the union the power of the king to create new baronets within Scotland is held to have ceased.

BARONI (Adriana), baroness of Piancaretta, in Mantua, an eminent singer, surnamed the fair, on account of her uncommon beauty. See next article.

BARONI (Leonora), and her mother, Adriana, were both distinguished for their extraordinary musical talents. Leonora was born at Naples, but spent the greatest part of her life at Rome. She had less beauty than her mother; but excelled her in profound skill in music, the fineness of her voice, and the delicacy of her manner. Mr. Bayle styles her one of the finest singers in the world; she was equally eminent as a composer, and was accordingly, as well as her mother, celebrated by the wits. In 1639 there was published, at Bracciano, a collection of Latin, Greek, Italian, Spanish, and French poems, in her praise, with this title, Applausi Poetici alle Glorie della Signora Leonora Baroni. Among the Latin poems of Milton there are three addressed, Ad Leonoram Romæ canentem, wherein this lady is celebrated for her singing, with an allusion to her mother's exquisite performance on the lute. A fine eulogium on her is contained in a discourse on the music of the Italians, printed with the life of Malherbe, and some other treatises at Paris, in 1672, in 12mo. It was composed by M. Maugars, prior of St. Peter de Mac, the king's English interpreter, who says, 'her singing threw me into such raptures, that I forgot my mortality, and thought myself among the angels, enjoying the felicity of the blessed!'

BARONIÆ CAPUT. See CAPUT.

BARONIS, a mountain of Chaus, in Barbary, three miles north of Fez. It produces red grapes, of which they make good wine, and is surrounded by villages.

BARONIUS (Cæsar), was born at Sora, in 1538, and studied at Rome, under Philip de Neri. In 1593 he was made general of the congregation of the Oratory, on the resignation of Philip de Neri, the founder. Pope Clement VIII. made him his confessor, and created him a cardinal in 1496. He was afterwards librarian to the Vatican; and died in 1605, at sixty-eight years of age. He wrote several works, the principal of which is his Annales Ecclesiastici, from A. D. 1 to 1198, in twelve vols. folio; which has been abridged by several persons, particularly by Henry Spondæus, Bzovius, and Ludovico Aurelio.

BARONSTOWN, a town of Ireland, in the county of Louth, six miles W. N. W. of Dundalk.

BARONY, BARONIA, or BARONAGIUM, may be considered as a lordship, held by some service in chief of the king, coinciding with what is otherwise called grand serjeanty. Baronies, in their first creation, moved from the king himself, the chief lord of the whole realm, and could be holden of no other lord. For example, the king enfeoffed a man of a great seigneurie in land, to hold to the person enfeoffed and his heirs, of the king and his heirs, by baronial service; to wit, by the service of twenty, forty, sixty, knights, or of such other number of knights, as the king by his feoffment limited or appointed. In the ages next after the conquest, when a great lord was enfeoffed by the king of a large seigneurie, such seigneurie was called barony, but more commonly an honor; as, the honor of Gloucester, the honor of Wallingford, and the like. There were in England certain honors, which were called sometimes by English and sometimes by foreign names. This happened when the same person was lord of an honor in Normandy, or some other foreign country, and also of an honor in England. For example, William de Forz, de Force, or de Fortibus, was lord of the honor of Albemarle in Normandy: he was also lord of two honors in England; to wit, the honor of Holderness, and the honor of Skipton in Cravene. These honors in England were sometimes called by the Norman name, the honor of Albemarle, or the honor of the earl of Albemarle. In like manner the earl of Britannie was lord of the honor of Britannie in France, and also of the honor of Richmond in England; the honor of Richmond was sometimes called by the foreign name, the honor of Britannie, or the honor of the Earl of Britannie. This serves to explain the terms honor Albemarliæ, or comitis Albemarliæ in Anglia; honor Britanniæ, or comitis Britanniæ in Anglia; not that Albemarle or Britannie were in England, but that the same person respectively was lord of each of the said honors abroad, and of each of the said honors in England. The baronies belonging to bishops are by some called regalia, as being held solely on the king's liberality. These do not consist in one barony alone, but in many; for tot erant baroniæ quot majora prædia. A barony, according to Bracton, is a right indivisible. Wherefore, if an inheritance be to be divided among co-partners, though some capital messuage may be divided, yet if the capital messuage be the head of a county or barony, it may not be parcelled: and the reason is, lest by this division many of the rights of counties and baronies by degrees come to nothing, to the prejudice of the realm, which is said to be composed of counties and baronies.

BARONY of Glasgow. See GLASGOW.

BAROPTIS, or BAROPTINUS LAPIS, among ancient naturalists, a species of stone, supposed to have wonderful virtues against venemous bites, externally applied. Pliny has left us but a very short description of it; he says, it was black in color, but variegated with large spots of red and white.

BAROS, or Barios, a sea-port of the island of Celebes, having a Dutch factory and settlement. There is a good trade here in opium. Long. 119° 15′ E., lat. 1° 24′ S.

BA'ROSCOPE, *n. s.* Βαρος and *σκοπεω*, an instrument to show the weight of the atmosphere. See Barometer.

> If there was always a calm, the equilibrium could only be changed by the contents; where the winds are not variable, the alterations of the *baroscope* are very small. *Arbuthnot.*

BAROTH, a market-town of Transylvania, on the Aluta.

BARQUETTE, or Barchetta, denotes a lesser sort of barks, used in the Mediterranean, for the service of galleys, as boats and shallops are for other ships.

BARQUISIMETO, a city of South America, in the province of Venezuela, founded by the Spaniards in 1552. It is placed on an elevated plain, and enjoys great comparative coolness. The most constant and equal wind which prevails is the north-east, and, whenever the rays of the sun are not tempered by it, the thermometer of Fahrenheit rises to 82° and 84°. In the surrounding plains and hills excellent pasture encourages the rearing of all sorts of cattle. Many of the citizens prefer this speculation, and find it to their advantage, although at the same time they cultivate the sugar-cane and wheat. From a freshness preserved by irrigation the vales produce cacao abundantly, and of a good quality; and the sides of the hills have lately been employed in the culture of coffee. There are in this place from 11,000 to 12,000 inhabitants, and the aspect of the city announces ease and affluence. The houses are well built; the streets straight, wide, and airy. The parish church is handsome, and served by two priests. The judicial and police duties are discharged by a common council and lieutenant. Barquisimeto is 120 miles W. S. W. of Caraccas, 450 N. N. E. of Santa Fé, and forty-five N. N. E. of Tocuyo.

BAR Dice, a species of false dice, so formed as that they will not easily lie on certain sides, or turn up certain points. Bar dice stand opposed to flat dice, which come up on certain points oftener than they should do.

Barre, or Barra, a small kingdom of Africa. See Barra.

Barr, St. the tutelar saint of the island of Barray, which was named after him. His holiday is the 25th of September. On this day the priest says mass, and all those of the Romish religion used punctually to attend. See Barry.

BARRA, a hill of Scotland in Aberdeenshire, in the parish of Bourtie, on the top of which are still distinctly visible the remains of an ancient camp, of a circular form, surrounded with ditches, and extending to near three acres.

Barra, in commerce, a long measure used in Portugal and some parts of Spain, to measure woollen cloths, linen cloths, and serges. There are three kinds; the barra of Valencia, thirteen of which make twelve yards and six seventh. English measure; the barra of Castile, seven of which make six yards and four sevenths; and the barra of Arragon, three of which make two yards and four sevenths English.

Barra, in law. See Bar.

Barra, a kingdom of the western coast of Africa, at the mouth of the Gambia, fourteen leagues in breadth, and eighteen long, according to Golberry. It contains a population of 200,000 souls, chiefly of the Mandingo race, zealous Mahommedans, and acute in commercial transactions. The capital is

Barra Inding, where a considerable trade is carried on to Barraconda in maize, elephants' teeth, gold dust and cotton cloth. Every vessel entering the Gambia here pays a tax of about £20 sterling to the king of Barra.

BARRABA, or Barrada, a tract of land in Siberia, lying between the rivers Irtisch and Oby, in the province of Tobolsk. It is uninhabited, but not through any deficiency of the soil; for that is excellent for tillage, and part of it might also be laid out in meadows and pastures. It is interspersed with a great number of lakes, which abound with carp, and the country produces great numbers of elks, deer, foxes, ermine, and squirrels. Between the Irtisch and Oby are some copper-mines.

BA'RRACAN, *n. s.* Fr. *bouracan*, or *barracan*, a strong thick kind of camelot.

Barracan, or Barragan, is something like camlet but of a coarser grain. It is used to make cloaks, surtouts, &c. to keep off rain. Barracans are chiefly made in France, as at Valenciennes, Lisle, Abbeville, Amiens, and Rouen. Those of Valenciennes are the most valued.

BARRACIDA, in ichthyology, a species of pike. See Esox.

BA'RRACK, *n. s.* Span. *barracca.* Little cabins made by the Spanish fishermen on the sea shore; or little lodges for soldiers in a camp. It is generally taken among us for buildings to lodge soldiers. It is not found in our early lexicographers. Perhaps from *barricado, barrique.* See Barricado.

> Like ours it should wholly be composed of natural subjects; it ought only to be enlisted for a short and limited time; the soldiers also should live intermixed with the people; no separate camp, no *barracks*, no inland fortresses, should be allowed.
> *Blackstone. Commentaries.*

Modern military men have always thought barracks very convenient, when there is sufficient room to make a large square, surrounded with buildings; because the soldiers are easily confined to their quarters, and the rooms being contiguous, orders are executed with privacy and expedition; and the troops have not the least connexion with the inhabitants of the place. This prevents quarrels and riots. Those for the horse were formerly called barracks, and those for the foot, huts; but now barrack is used indifferently for both.

Much opposition was made in parliament during the late war to the erection of barracks, as inimical to the liberties of Britain, by tending to estrange the soldiers from the citizens; thus rendering the former fit tools to enslave the latter, should any future king or ministry wish to change the constitution, or compel the people to submit to unpopular and arbitrary measures. Plausible as these arguments may appear, there are others that have also considerable weight, on the side of these establishments: in regard to the morals of the people, we are persuaded the most virtuous country town or village will be proportionally corrupt as soldiers are quartered among them; and the fact is, that the soldiers and the citizens may be too much as well as too little intermixed.

Until the year 1793, barracks were neither numerous in Great Britain, nor were they under the control and management of a separate and peculiar board. In January 1793, a superintendant-general of the barracks was appointed; and, on the 1st of May that year, the king's warrant was issued for their regulation. Greater powers were given to him in the year 1794; but as these seemed to interfere with the duties and powers of the Board of Ordnance, a new warrant was issued in the year 1795, defining and limiting the respective duties and powers of the Board of Ordnance, and the superintendant-general, or barrack-master-general, as he was now called. The salaries and extra pay of the barrack-master-general and his officers amounted in 1796 to £9524. 17s. 2d. The establishment was afterwards considerably increased, in proportion as the number of barracks throughout the kingdom increased, and by the creation of some new officers, among whom was a law clerk. In 1806, their salaries amounted to £19,329. 4s. 10d.

During this year the commissioners of military enquiry recommended that the offices of barrack-master-general, and deputy barrack-master-general, should be totally abolished, and that the superintendence of the barrack establishment should be vested in commissioners. This suggestion, and some others relative to the mode of transacting the business of the department, and preventing useless and extravagant expenditure, have been followed; and the barrack establishment is now under the direction of four commissioners, one of whom is generally a military man.

As it frequently happened that it was absolutely necessary to build barracks on an emergency, government was often obliged to pay an extravagant price for the land which they needed for their erection; in order to remedy this evil, it was provided by the act, usually called the defence act, 43d Geo. III. ch. 55, that justices of the peace might put any general officer into the possession of such ground as he might deem fit for the erection of barracks; the value of it to be settled afterwards by a jury; provided, however, the necessity for such ground was certified by the lord lieutenant, or two deputy lieutenants of the county. The following are the barrack districts in Great Britain:

1. Northern, containing Northumberland, Cumberland, Westmoreland, and Durham.

2. York, containing Yorkshire.

3. Eastern, containing Norfolk, Suffolk, Cambridge, Huntingdonshire, and all Essex, except Tilbury-fort.

4. Southern, containing Kent, Tilbury-fort, and Sussex

5. South-western, containing Hampshire and Dorsetshire.

6. Isle of Wight.

7. Western, containing Devonshire, Cornwall and Somerset.

8. Severn, containing Gloucestershire, Worcestershire, Herefordshire, Monmouthshire, and South Wales.

9. North-western, containing Cheshire, Shropshire, Lancashire, North Wales, and the Isle of Man.

10. London.

11. Home, containing Middlesex, Surry Hertfordshire, and part of Kent.

12. North-inland, containing Derbyshire, Nottinghamshire, Staffordshire, Warwickshire, Leicestershire, and Rutlandshire.

13. South-inland, containing Bedfordshire, Northamptonshire, Oxfordshire, and Buckinghamshire.

14. Jersey, Guernsey, and Alderney.

SCOTLAND.

Northern, containing Caithness, Sutherland Ross-shire, Inverness-shire, Nairnshire, Moray shire, and Bamffshire.

Western, containing Aberdeenshire, Argyleshire, Ayrshire, Bute, Kincardineshire, Lanarkshire, Renfrewshire, and Wigtonshire.

Centre, containing Angusshire, Clackmannanshire, Dunbartonshire, Fifeshire, Kinross-shire, Perthshire, and Stirlingshire.

Southern, containing the Lothians, Berwickshire, Peeblesshire, Selkirkshire, Roxburghshire, and Dumfriesshire.

On the 14th of July, 1805, there were in Great Britain and Jersey, &c.

Established barracks of brick and stone	84
———— wood	12
Temporary barracks	75
———— rented	41
	212

The following statement exhibits the several particulars of the total expense incurred by the nation for barracks, and the barrack-office, in Great Britain, between the 25th of December 1792, and the 10th of November 1804:

	£	s.	d.
Buildings and purchases of land	3,930,223	5	8
Forage	846,246	7	10
Beer	643,030	9	6
Coals, candles, furniture, rents, repairs, supplied by barrack-masters, and salaries	1,685,487	8	[illegible]
Office-establishment	256,129	10	4
Fees at War-office	80,346	3	6
Insurance	1,519	2	[illegible]
Additional rents	36,860	13	[illegible]
Lodging money to officers	139,582	16	0
Engines	11,866	0	3
Bedding, furniture, &c. issued by the barrack-office, and in store	1,357,215	7	[illegible]
Miscellaneous	35,498	4	[illegible]
Total,	£9,024,005	8	

The annual expense, during the last war varied from £350,000 to £500 000; in the [illegible]

1814, it was £309,826. The peace estimate for 1816 is £173,500. In Ireland, where barracks are more numerous, the expense, in 1814, was £360,515, and the peace estimate for 1816 was £213,000.

See first, second, third, and fourth Reports of the Commissioners of Military Enquiry, 1806; Finance Reports and Estimates laid before Parliament for 1814 and 1816, &c.

Barrack Allowance, a specific allowance of bread, beer, coals, &c. to the regiments stationed in barracks.

Barrack Guard, the principal guard of a regiment in barracks; the officer of which is responsible for the regularity of the men, and for all prisoners duly committed to his charge while on that duty.

Barrack-master-general, a staff-officer at the head of the barrack-department, who has a number of barrack-masters and deputies under him, that are stationed at the different barracks. He has an office and clerks for the despatch of business; and to this office all reports, &c. respecting the barrack department are made.

BARRACOL, in ichthyology, a name given by Artedi, from the Venetians, to the species of ray fish called by Bellonius and Gesner miraletus, and by others raia oculata lævis. The specific name of Artedi carries in it a much better character of the fish; he calls it the ray, with a smooth back and belly; and with the eyes surrounded with a series of spines, and three other rows of them on the tail.

BARRACONDA, a considerable town in central Africa, about 400 miles up the Gambia, where very formidable cataracts obstruct the navigation of the river, and prevent any but the smallest canoes from passing. The tide flows up to this place. Long. 13° W., lat. 13° 36′ N.

BARRACUDA, a species of esox.

BARRADA, or Barradys, a river of Syria, rising at Barraud, twenty-four miles west of Damascus. Receiving the Fichée, it divides into seven branches, six miles from that city; the fourth alone, which washes the northern walls, preserving the original name. All the different branches afterwards rejoin the main stream, which is discharged into a lake twenty-one miles north-east.

BARRAGAN, a river of the province and government of Buenos Ayres, which runs north, and enters the Plata.

BARRAGAN, Bay of, in the La Plata, about twelve miles below Buenos Ayres, to the south-east. Ships discharge, in lighters, their cargoes in the roadstead of Buenos Ayres, and then go to the bay of Barragan to wait for their cargoes out. The land about it is low, and the bay therefore much exposed, nor can ships of any burden come within two or three miles of the shore. Some banks under water, however, meet the force of breakers, but there is little security, when a storm comes on, against a ship's parting from her ground-tackle, and being driven on them. The river running into the bay can receive vessels drawing twelve feet water, but none larger.

BARRAI Sciahiat, the Arabian name given to the desert of Natron in Egypt, situated to the west of the Delta, and the south of lake Mareotis. It contains the two lakes Nedebe and Lebe, from which the Natron is drawn, and is pervaded by a vast and deep ravine, called the Bahr Belame, or river without water. This desert is celebrated for the great number of monasteries which were founded in it at a former period.

BARRAMAHAL, a district in Southern India situated between twelve and fourteen degrees of north latitude, consisting of twelve places, which the name is said to signify. These are Krishnagiry, Jacadeo, Varinaghada, Maharay-ghada, Bujungaghada, Tripatura, Vanambady, Ghan ganaghada, Sudarshana-ghada, and Tatucallu. This district was ceded to the British by Tippoo, in 1792. The inhabitants are Hindoos.

BARRATI, Barred, in ecclesiastical history an appellation given to the Carmelites, after they were obliged to lay aside the white cap, and wear cowls striped black and white.

BA'RRATOR, *s.* } From *barat*, old French;
Ba'rratry, *s.* } from which is still retained *barateur*, a cheat; from the Dano-Norman *baret*, our lawyers have *baretter*, *barettry*, a wrangler and encourager of law-suits; one who harasses the bar or courts with importunate litigations. Lord Coke defines barrator to be a common mover and maintainer of suits, in disturbance of the peace. This exciting and fomenting of litigious quarrels is an offence by common law, and punishable by fine and imprisonment; and if the barrator be an attorney, a statute of the 12th of George the First provides that he shall be incapacitated from practising for the future, under pain of seven years' transportation.

> Will it not reflect as much on thy character, Nic, to turn *barrator* in thy old days, a stirrer-up of quarrels amongst thy neighbours?
>
> *Arbuthnot's History of John Bull.*

> 'Tis arrant *barratry*, that bears
> Point blank an action 'gainst our laws.
>
> *Hudibras.*

Barratry, in commerce. See Baratry and Insurance.

Barratry, in the law of England, has been noticed. See Baratry. The term, however, is of foreign origin; and in Italy, and other countries, seems ordinarily to have been applied to the traffic of ecclesiastical benefices; but was afterwards used in a more general sense, as applicable to all corrupt buying and selling of justice. 'In Scotland it signified the corrupt purchasing of benefices or offices of collection, from the see of Rome, by persons who left the realm for that purpose; a practice which had become frequent, and was in various respects injurious to the realm; as a means of carrying money out of it, without any return of value, as prejudicial to the right of patronage in the king or others, and to the free elections of the monks in the monasteries, both which the pope by prevention pretended to exclude; and as contributing to raise the rate of taxation upon benefices, by the false accounts which those suitors for the office of collector carried to the pope.

BARRAUX, or Fort Barreaux, a fortress of France, in Dauphiny, on the borders of Savoy, now included in the department of the Isere, arrondissement of Grenoble. It stands on the right bank of the river Isere, near the entrance of the valley of Gresivaudan, on the road from Grenoble to Chamberry, eighteen miles north-east of the former town. The fort was erected at a great expense by Charles Emanuel, duke of Savoy, in 1597, and is strong both by nature and art. The French, however, got possession of it in a single night, and is retained it at the peace of Vervins, on the plea that it was built on French ground. Population 1320.

BARRE (Louis Francis Joseph de la), an ingenious writer, born at Tournay, in 1688. He received his education at the college of St. Barbe, at Paris, where he assisted Anselm Banduri in his extensive work, Imper. Orientale, Recueils de Medailles des empereurs, after which he had a pension given him by the grand duke of Tuscany. He also published Memoirs for the History of France and Burgundy, and various other works. He died in 1738.

Barre' or Barry (Madame Du), the favorite mistress of Louis XV. She is said to have been one of the richest women in France. She was condemned by the revolutionary tribunal of Paris, as a conspirator against the republic. Her behaviour was marked by unusual cowardice. The executoiner was obliged to support her all the way to the scaffold, and he required two assistants to lift her upon it; after which she exerted all her strength to prevent being fastened to the plank. She was guillotined on the 9th December 1793.

Barre', a township of Worcester county, Massachusetts, twenty-four miles north-west of Worcester, and sixty-six west of Boston. Also a township of Pennsylvania, in Huntingdon county.

BA'RREL, *v.* & *n.* Fr. *barril*, Ital. *barrile*, Span. *barril*. Junius says, perhaps from *barre*, *repagulum* (see To Bar); because liquids are held or contained in a cask, quasi in quondam repagulo; as if under bar, or in a stout strong vessel stopped close. It is applied to any thing hollow, as to the ear, the barrel of a gun, a cylinder about which any thing is wound. It also denominates a particular measure.

I would have their beef beforehand *barrelled*, which may be used as is needed. *Spenser on Ireland.*

Barrel up earth and sow some seed in it, and put it in the bottom of a pond. *Bacon.*

It hath been observed by one of the ancients, that an empty *barrel*, knocked upon with the finger, giveth a diapason to the sound of the like *barrel* full. *Id.*

Trembling to approach
The little *barrel* which he fears to broach.
Dryden.

Several colleges, instead of limiting their rents to a certain sum, prevailed with their tenants to pay the price of so many *barrels* of corn, as the market went. *Swift.*

Take the *barrel* of a long gun perfectly bored, set it upright, with the breech upon the ground, and take a bullet exactly fit for it; then, if you suck at the mouth of the *barrel* ever so gently, the bullet will come up so forcibly, that it will hazard the striking out your teeth. *Digby.*

Your string and bow must be accommodated to your drill; if too weak, it will not carry about the *barrel*. *Moxon.*

Barrel, in mechanics, a term given by watch makers to the cylinder about which the spring is wrapped; and by gun-smiths to the cylindrical tube of a gun, pistol, &c. through which the ball is discharged.

Barrel of a Pump, is the wooden tube which makes the body of the engine, and wherein the piston moves.

Barrel of Eels and Barrel of Salmon, ought to contain forty-two gallons each.

Barrel of Soap must weigh 256lb.

Barrel, or Barille of Florence, is a liquid measure, containing twenty flasks, or one-third of a star or staio.

Barrel, or Barique of Paris, contains 210 pints, or twenty-six septiers and a half; four bariques make three muids, or one tun.

Barrels, in artillery, are used for holding powder, small-shot, flints, sulphur, salt-petre, resin, pitch, quick-match, &c. Barrels filled with earth serve to make a parapet to cover the men, like gabions and canvas bags.

Barrels, Fire, are casks of divers capacities, filled with bombs, grenadoes, fire pots, &c. and mixed with great quantities of tow soaked in petroleum, turpentine, pitch, &c. used by the besieged to defend breaches. Some are mounted on wheels, filled with composition, and intermixed with loaded grenades, and the outside full of sharp spikes; some are placed under ground, which have the effect of small mines: others are used to roll down a breach, to prevent the enemy's entrance. Composition, corned powder, thirty pounds, Swedish pitch twelve, saltpetre six, and tallow three. Not used now. See Fire Ship

Barrels of Gunpowder are about sixteen inches diameter, and thirty or thirty-two inches long, holding 100 pounds of powder; but the quantity put into a whole barrel is only ninety pounds, into a half barrel forty-five pounds, and a quarter barrel, used for rifle powder, only twenty-two pounds and a half; this proportion leaves a space for the powder to separate when rolled, or otherwise it would always be in lumps, and liable thereby to damage.

Barrels, Budge, hold from forty to sixty pounds of powder; at one end is fixed a leathern bag with brass nails: they are used in actual service on the batteries, for loading the guns and mortars, to keep the powder from firing by accident.

Barrels's Sound, on the north-west coast of America, is situated about six leagues north-west of Washington, or Charlotte Islands. Long. 131° W., lat. 52° N.

Barrelling of Herrings. See Herring Fishery.

BA'RREN, *adj.*
Ba'rrenly, *adv.*
Ba'rrenness, *s.*
} Barren, i. e. *barr-ed*, stopped, shut, strongly closed up, which cannot be opened, from which can be no spirit or issue.—*Tooke*. See To Bar. Thus it is applied to sterile ground, unfruitful trees, unprolific animals; to unimaginative and uninstructed minds; to professedly intellectual works, destitute of thought, and originality; to whatever is useless and unproductive.

But I that am exiled; and *barreine*
Of alle grace, and in so gret despaire,
That there n'is erthe, water, fire, ne aire,

eature that of him maked is
nay me hele, or don comfort in this.
Chaucer.

was the markis, and his folk therefore,
gh a maiden child come all before
unto a knave child atteine;
bed, sin she n'is not *barreine*. *Id.*

darksome delve, farre under ground,
rnes and *barren* brakes environed round,
e the same may easily out-win;
y waies to enter may be found,
e to issue forth when one is in:
rd harder is to end than to begin.
Spenser.

raine ground, whom winter's wrath hath
ted,
mirror to behold my plight.
hy fresh spring flowr'd, and after hasted
er proude with daffodillees dight;
s come thy winter's stormie state,
e mard wherein thou maskedst late. *Id.*

ost blessed Spirit! pure Lampe of Light,
ring of Grace and Wisedom trew,
to shed into my *barren* spright
drop of thy celestial dew,
ny rimes with sweet infuse embrew,
e words equal unto my thought,
marveiles by Thy mercie wrought. *Id.*

especial praise of many, which are due to hat he hath laboured to restore as to their eritage such good and naturall English ave beene long time out of use and almost erited, which is the only cause that our gue, which truly of itself is both full enough nd stately enough for verse, hath long time ed most *barren* and bare of both.
Critique on Spenser, prefixed to his Works.

all not be male or female *barren* among ong your cattle. *Deuteronomy.*

no help in lamentations;
arren to bring forth laments. *Shakspeare.*

of them that will make themselves laugh, me quantity of *barren* spectators to laugh *Id.*

t not in your speed, Antonius,
ch Calphurnia; for our elders say
arren, touched in this holy chase,
off their steril curse. *Id.*

ation of this city is pleasant, but the water and the ground *barren*. 2 *Kings.*

the self same-hamlet, lands have divers value, through the diversity of their fer*rrenness*. *Bacon.*

ortunity of our adversaries hath constrainr to dwell than the *barrenness* of so poor a d have seemed either to require or to admit. *Hooker.*

mine eye hath caught new pleasures
landscape round it measures;
ns and fallows gray,
nibbling flocks do stray;
, on whose *barren* breast
g clouds do often rest;
trim, with daisies pied,
ooks, and rivers wide. *Milton.*

They led the vine
r elm; she spous'd about him twines
geable arms, and with her brings
, th' adopted clusters, to adorn
leaves. *Id.*

for children, and thought *barrenness*
a reproach. *Id.*

e be mention'd then of violence
ourselves; and wilful *barrenness*
ts off us from hope. *Id.*

The adventures of Ulysses are imitated in the Æneis; though the accidents are not the same, which would have argued him of a total *barrenness* of invention. *Dryden.*

Telemachus is far from exalting the nature of his country; he confesses it to be *barren*. *Pope.*

Some schemes will appear *barren* of hints and matter, but prove to be fruitful. *Swift.*

Without the evening dew and show'rs,
The earth would be a *barren* place,
Of trees, and plants, of herbs and flow'rs,
To crown her now enamell'd face.
Charles Cotton.

This heart, by age and grief congeal'd,
Is no more sensible to love's endearments,
Than are our *barren* rocks to morn's sweet dew,
That calmly trickles down their rugged cheeks.
Miller's Mahomet.

There is a power upon me which withholds
And makes it my fatality to live:
If it be life to wear within myself,
This *barrenness* of spirit, and to be
My own soul's sepulchre, for I have ceas'd
To justify my deeds unto myself,
The last infirmity of evil. *Byron.*

Barren Island, an island in the bay of Bengal, about eighteen miles in circumference; the vegetation consists principally of withered shrubs and trees. It contains a volcano 1800 feet above the level of the sea. Immense columns of smoke and showers of red-hot stones, some of them three or four tons weight, are discharged from it. Distant forty-five miles east of the Lower Andaman Island. Lat. 12° 15′ N. Also a small island in Chesapeake bay, north-east from the mouth of Patuxent river. Long. 76° 22′ W., lat. 38° 34′ N.

Barren Island, Cape, an island of the South Pacific Ocean, in Bass Straits, between Great Island on the north, and Clarke's Island on the south. It is about twenty miles in length, and ten in breadth, chiefly covered with low vegetation. Here are found the peculiar quadrupeds of the Australasian regions, the kangaroo, wombat, and duck-billed ant eater.

Barrenness. See Sterility.

Barren-wort. See Epimedium.

BARRERIA, in botany, a genus of plants, class pentandria, order monogynia. Its generic character is cal. quinquedentate; cor. rotate, divisions scrobiculate; filaments dilated; anth. tetragonal, marginate, margins cohering. The only species of this genus is the B. theobromæfolia, a tree of about fifty feet in height, a native of Cayenne.

BARRETRY. See Barratry.

BARRETT (George), an eminent landscape painter, was born in Dublin about 1732. By natural genius and application, he acquired, without a teacher, such skill in the art of painting, as to obtain the premium of £50 offered by the Dublin society for the best landscape in oil. He afterwards went to London, and there, in 1763, the premium of £50 for the best landscape, was adjudged to him by the society for the encouragement of arts, &c. He was one of the original planners of the Royal Academy, of which he became a member. He died in 1784.

Barrett (William,) an eminent surgeon, born in Somersetshire. He settled at Bristol, and gained great reputation in his business. In 1788 he published a history of the city of Bristol, in one vol. 4to. the materials of which he had employed upwards of twenty years in collecting. He died in 1789. Mr. Barrett was the early patron of the celebrated Chatterton.

Barrica'de, *v.* & *n.*
Barrica'do, *v.* & *n.*
Ba'rrico,
Barrier.
From *barr*, to stop, bar, or obstruct. A fortification; any thing fixed to hinder entrance; barrier likewise signifies boundary or limit; a bar to mark the limits of any place.

Why it hath bay windows, transparent as *barricadoes*; and the clear stones to the north are as lustrous as ebony; and yet complainest thou of obstructions. *Shakspeare.*

The access was by a neck of land, between the sea on one part, and the harbour water, or inner sea on the other; fortified clean over with a strong rampier and *barricado*. *Bacon.*

For justs, and tourneys, and *barriers*, the glories of them are chiefly in the chariots, wherein the challengers make their entries. *Id.*

Fast we found, fast shut
The dismal gates, and *barricado'd* strong! *Milton.*

He had not time to *barricado* the doors; so that the enemy entered. *Clarendon.*

The truth of causes we find so obliterated, that it seems almost *barricadoed* from any intellectual approach. *Harvey.*

This he courageously invaded,
And having enter'd, *barricaded*,
Insconc'd himself as formidable
As could be underneath a table. *Hudibras.*

Pris'ners to the pillar bound,
At either *barrier* plac'd; nor, captives made,
Be freed, or arm'd anew. *Dryden.*

The queen is guarantee of the Dutch, having possession of the *barrier*, and the revenues thereof, before a peace. *Swift.*

But wave what'er to Cadmus may belong,
And fix, O muse, the *barrier* of thy song
At Oedipus. *Pope's Statius.*

How instinct varies in the grovelling swine,
Compar'd half reas'ning elephant! with thine:
'Twixt that and reason what a nice *barrier*!
For ever sep'rate, yet for ever near. *Pope.*

Safe in the love of Heav'n, an ocean flows
Around our realm, a *barrier* from the foes. *Id.*

Now all the pavement sounds with trampling feet,
And the mix'd hurry *barricades* the street;
Entangled here, the waggon's lengthened team. *Gay.*

If you value yourself as a man of learning, you are building a most impassable *barrier* against improvement. *Watts.*

The *barrier* wall, the river deep and wide,
The horrid crags, the mountains dark and tall,
Rise like the rocks that part Hispania's land from
Gaul. *Byron.*

Barricade, in military affairs, is usually formed when time permits, of pales or stakes crossed with batoons, and shod with iron at the feet, and set up in passages or breaches.

Barricade, in naval architecture, a strong wooden rail, supported by stanchions, extending across the foremost part of the quarter deck. In a vessel of war, the vacant spaces between the stanchions are commonly filled with rope-mats, cork, or pieces of old cable; and the upper part, which contains a double rope-netting above the rail, is stuffed with full hammocks to intercept the motion, and prevent the execution of small shot in time of battle.

BARRIER, in fortification, a kind of fence made at a passage, retrenchment, &c. to stop up the entry. It is composed of great stakes, about four or five feet high, placed at the distance of eight or ten feet from one another, with transums, or overthwart rafters, to stop either horse or foot, that would enter or rush in with violence: in the middle is a moveable bar of wood, that opens or shuts at pleasure. A barrier is commonly set up in a void space, between the citadel and the town, in half-moons, &c.

Barrier Islands, a range of islands near the east coast of New Zealand, thirty miles in length, at the mouth of the river Thames. Long. 184° 27′ W., lat. 36° 11′ S.

BARRIERS, styled the jeu de barres, French, was a martial exercise of men armed and fighting together with swords, within certain bars or rails which separated them from the spectators. It is now disused.

BARRIGA Negra, a river in the vice-royalty of Buenos Ayres, South America, which has its rise about 160 miles north-west of Monte Video, and after being augmented by the accession of several streams, falls into lake Meri. The country around is well watered, mountainous, and woody. Here are numbers of great breeding estates for cattle.

BARRING a Vein. See To Bar.

BARRINGTON (John Shute, Viscount), a distinguished theologian, was the youngest son of Benjamin Shute, Esq. a merchant and a protestant dissenter. He was born in 1678, and received part of his education abroad. On his return to London, he studied in the Inner Temple, and in 1701 distinguished himself as a writer in favor of the civil rights of the dissenters. Being employed by Lord Somers to engage the Presbyterians of Scotland to favor the union between the two kingdoms, he was in 1708 rewarded by the place of commissioner of the customs, from which the tory ministry of Anne removed him. About this time an ample fortune was left him by Francis Barrington of Tofts, Esq. whose name he assumed. On the accession of George I. he was chosen member of parliament for Berwick-upon-Tweed, and in 1720 was raised to the peerage by the title of viscount Barrington of Ardglass. Unfortunately he became connected with one of the bubbles of that time, called the Harburgh Lottery; and was in consequence expelled the House of Commons; a censure which he scarcely merited, as the misconduct seems to have rested principally with the ministry of Hanover. But his strong opposition to Sir Robert Walpole is thought to have produced this severity. In 1725 Lord Barrington published his 'Miscellanea Sacra,' 2 vols. 8vo., since reprinted by his son, the late Bishop of Durham, 3 vols. 8vo. 1770. In the same year he published 'An Essay on the several Dispensations of God to Mankind,' 8vo. and was also the author of various other tracts relative to toleration in matters of religion. He died in 1734, leaving several children, of whom five sons rose to high stations respectively in the state, the church, the law, the army, and the navy; the youngest of them was the late venerable Bishop of Durham. Lord Barrington was the friend and disciple of Locke;

and although bred a Dissenter, and a leader of that body, was also a frequenter and communicant of the Church of England.

Barrington (Daines), fourth son of viscount Barrington, was distinguished as a lawyer, antiquary, and naturalist. He was born in 1727, and, after preparatory studies at Oxford and the Inner Temple, was called to the bar. He held several offices previous to his being appointed a Welch judge in 1757, and was subsequently second justice of Chester till 1785, when he resigned that post, and thenceforward lived in retirement, in the Temple, where he died, March 1800. His works, which are numerous, consist principally of papers in the Transactions of the Royal and Antiquarian Societies, of both which learned bodies he was a fellow; Observations on the Statutes, chiefly on the more Ancient, &c. 1766, 4to.; an edition of Orosius, with the Anglo-Saxon version of king Alfred, and an English translation and notes, 1773; Tracts on the Probability of reaching the North Pole, 1775, &c. occasioned by the arctic expedition of Capt. Phipps, afterwards Lord Mulgrave.

Barrington, a township of Nova Scotia, in Queen's county, on the east side of the bay of Fundy. 2. A township of New Hampshire, in Strafford county, about thirty miles north-west of Portsmouth. Alum is found here. 3. A township of Rhode Island, in Bristol county, on the north-west branch of the Warren, seven miles south-east of Fox-Point, in Providence.

Barrington, Great, a township in Berkshire, county of Massachusetts. It lies 140 miles west of Boston.

BARRINGTONIA, in botany, a genus of the polyandria order, belonging to the monadelphia class of plants, the characters of which are: one female, the calyx dephillous above; with a drupa, which it crowns; and the seed is a quadrilocular nut. There is but one species known, viz. B. speciosa, a native of China and Otaheite.

BA'RRISTER; from *barr*, and *ester*, to remain or continue: thus the combination of the two forms, *barrester*, one who takes his station at a bar; who continues there—that is who carries on his profession at the bar; a pleader of causes.

> Jollier of this state,
> Than are new-benefic'd ministers; he throws,
> Like nets or lime-twigs, wheresoe'er he goes,
> His title of *barrister* on every wench,
> And wooes in language of the Pleas and Bench.
> *Donne.*
>
> This being reveal'd, they now begun
> With law and conscience to fall on,
> And laid about as hot and brainsick,
> As th' utter *barrister* of Swanswick.
> *Butler's Hudi'ras.*

Barristers are sometimes termed jurisconsulti; and in other countries called licentiati in jure. Anciently barristers at law were called apprentices of the law, in Latin, apprenticii juris nobiliores. The time before they ought to be called to the bar, by the ancient orders, was eight years, now reduced to five; and the exercises done by them, (if they were not called ex gratia) were twelve grand moots performed in the inns of Chancery in the time of the grand readings, and twenty-four petty moots in the term times, before the readers of the respective inns: and a barrister newly called is to attend the six (or four) next long vacations the exercises of the house, viz. Lent and Summer, and is thereupon for those three (or two) years styled a vacation barrister. The duties of a barrister are to be considered honorary, and he can maintain no action for his fees, which are reckoned a gratuity, not a hire; and which cannot be even demanded by a barrister without doing wrong to his reputation.

BARRITUS is a word of German original, adopted by the Romans to signify the general shout usually given by the soldiers of their armies on their first encounter after the classicum or alarm. This custom, however, of setting up a general shout was not peculiar to the Romans, but prevailed amongst the Trojans according to Homer, amongst the Germans, the Gauls, Macedonians, and Persians. See Classicum.

BARROS (John de), a celebrated Portuguese historian, born at Visere, in 1496. He was educated at the court of king Emanuel, among the princes of the blood, and made a great progress in Greek and Latin. The infant John, to whom he attached himself, and became preceptor, having succeeded the king his father, in 1521, Barros obtained a place in this prince's household; and in 1522 was made governor of St. George del Mina, on the coast of Guinea. The king, having recalled him to court three years after, made him treasurer of the Indies, and this post inspired him with the thought of writing this history; for which purpose he retired to Pombal, where he died in 1570. His history of Asia and the Indies is divided into decades; the first of which he published in 1552, the second in 1553, and the third in 1563; but the fourth decade was not published till 1615, when it appeared by order of Philip III. who purchased the MS. Several authors have continued it, so that we have at present twelve decades. He left many other works.

BARROW, *n. s.* beꞃeþe, Sax. supposed by Skinner to come from bear; any kind of carriage moved by the hand; as a *hand-barrow*, a frame of boards, with handles at .each end, carried between two men; a *wheel-barrow*, that which one man pushes forward by raising on one wheel.

> Have I lived to be carried in a basket, like a *barrow* of butcher's offal, and thrown into the Thames.
> *Shakspeare.*
>
> No *barrow's* wheel
> Shall mark thy stocking with a miry trace. *Gay*

Ba'rrow, *n. s.* beꞃᵹ. Sax. a hog; whence *barrow* grease, or hog's lard.

> His life was like a *barrow* hogge,
> That liveth many a day,
> Yet never once doth any good,
> Until men will him slay.
> *The Jew of Venice, in Percy.*
>
> And therefore take my words thus, that I mean no other swine but such as feed and root in the field: among which the female, especially a guelt that never farrowed, is more effectual than a (tame) bore, *barrow* hog, or a breeding sow. *Holland's Plinie.*

Barrow, whether in the beginning or end of names of places, signifies a grove; from beaꞃþe, which the Saxons used in the same sense. *Gibson.*

Barrow is likewise used in Cornwall for a hillock, under which, in old times, bodies have been buried. See Barrows.

Barrow, a river of Ireland, which rises in Queen's county, and passing by Port-Arlington, Monastereven, Athy, Carlow, &c. is joined by the Nore before it arrives at Ross, after which, continuing south, it joins the Suir in Waterford Haven.

Barrow, a river of Westmoreland, which runs into the Burbeck, near Howse-house.

Barrow (Isaac), an eminent mathematician and divine, of the last century, was the son of Mr. Thomas Barrow, a linen-draper in London, where he was born in 1630. He was at first placed at the charter-house school for two or three years; where his behaviour afforded but little hopes of success in the profession of a scholar, but being removed thence his disposition took a happier turn; and having soon made a sufficient progress in learning, he was admitted a pensioner of Peter House, Cambridge. He now applied himself with great diligence to the study of all branches of literature, especially that of natural philosophy. He afterwards turned his attention to physic, and made a considerable progress in anatomy, botany, and chemistry; after which he studied chronology, astronomy, and geometry. He then travelled into France and Italy, and in a voyage from Leghorn to Smyrna, the ship being attacked by an Algerine pirate, he staid upon deck, and with the greatest intrepidity, worked the guns, till the pirate, perceiving the stout resistance the ship made, sheered off and left her. At Smyrna he met with a most kind reception from Mr. Bretton, the English consul, upon whose death he afterwards wrote a Latin elegy. From thence he proceeded to Constantinople, where he received similar civilities from Sir Thomas Bendish the English ambassador, and Sir Jonathan Dawes, with whom he afterwards preserved an intimate friendship. At Constantinople he read the works of St. Chrysostom, once bishop of that see, whom he preferred to all the other fathers, and about a year after he returned to Venice. From thence he came home in 1659, through Germany and Holland; and was ordained by bishop Brownrig. In 1660 he was chosen to the Greek professorship at Cambridge, and gave lectures upon Aristotle's rhetoric. In 1662 he was appointed professor of geometry in Gresham college, and in 1603 elected a fellow of the Royal Society, in the first choice made by the council after their charter. The same year he was chosen professor of mathematics at Cambridge, and resigned his professorship of Gresham college. In 1669 he resigned his mathematical chair to his learned friend Isaac Newton, being determined to give up the study of mathematics for that of divinity. Upon quitting his professorship, he was only a fellow of Trinity college, till his uncle gave him a small sinecure in Wales, and Dr. Seth Ward, bishop of Salisbury conferred upon him a prebend in his church. In 1670 he was created D. D. by mandate; and, upon the promotion of Dr. Pearson, master of Trinity college, to the see of Chester, he was appointed to succeed him by the king's patent, dated the 13th of February, 1672. When the king advanced him to this dignity, he
said, 'he had given it to the best scholar
land.' In 1675 he was raised to be vice-
lor of the university. He died on the 4th
1677, in the forty-seventh year of his
was interred in Westminster abbey,
monument adorned with his bust was
erected. Among other instances of his
vivacity, is related the following renco
tween him and the celebrated Lord R
These two meeting one day at the court,
doctor was king's chaplain in ordinary,
ter, thinking to banter him, with a flip
and a low formal bow, accosted him wit
tor, I am yours to my shoe-tie;' Barr
ceiving his drift, and determined upon d
himself, returned the salute, with, 'My
am yours to the ground.' Rochester,
improving his blow, returned it with, 'D
am yours to the centre;' which was as
followed up by Barrow, with, 'My lor
yours to the antipodes.' Upon which,
ter, disdaining to be foiled by a musty o
of divinity, as he used to call him, ex
'Doctor, I am yours to the lowest pit
upon which, Barrow turning upon his h
a sarcastic smile, archly replied, 'There,
I leave you.'

Of Dr. Barrow's numerous works, th
pal are, 1. Euclidis Elementa, 8vo.
1655. 2. Euclidis Data, 8vo. Canta
3. Lectiones Opticæ XVIII. 4to. Lon
4. Lectiones Geometricæ XIII. 4to. Lon
5. Archimedis Opera, Apollonii Co
Libri IV; Theodosii Sphericorum, Lib.
4to. Lond. 1675. 6. Lectio, in qua The
Archimedis de Sphæra et Cylindro
tur, 12mo. Lond. 1678. 7. Math
Lectiones, &c. Lond. 1683. 8. The
Works in 3 vols. fol. Lond. 1683, publi
Tillotson. 9. Isaaci Barrow Opuscula,
Lond. 1687.

Barrows, in ancient topography,
hillocks or mounts, met with in many
the world, intended as repositories for t
and formed either of stones heaped u
earth. For the former, more generally
by the name of cairns see Cairns. O
ter Dr. Plott takes notice of two kinds in
shire: one placed on the military ways;
in the fields, meadows, or woods; the
doubtless of Roman erection, the oth
probably erected by the Britons or Dan
have an examination of the barrows in
by Dr. Williams, in the Phil. Trans.
from which we find that they are gener
posed of foreign or adventitious earth;
such as does not rise on the place, but
from some distance. Monuments of
are also very frequent in Scotland. O
into the barrows, urns have been found
of them, made of calcined earth, and c
burnt bones and ashes; in others, sto
containing bones entire; in others, bon
lodged in chests nor deposited in urns
tumuli are round, not greatly elevated,
nerally at their basis surrounded wi
They are of different sizes; in proportion,
posed, to the greatness, rank, and pow
deceased person. The links of Skail,

ick, one of the Orkneys, abound in round arrows. Some are formed of earth alone, others f stone covered with earth. In the former was und a coffin, made of six flat stones. They e too short to receive a body at full length: e skeletons found in them lie with the knees ressed to the breast, and the legs doubled along e thighs. A bag, made of rushes, has been und at the feet of some of these skeletons, ontaining the bones, most probably, of another f the family. In one were to be seen mul- itudes of small beetles; and as similar insects ave been discovered in the bag which enclosed he sacred ibis, we may suppose that the Egyptians, and the nation to whom these tumuli be- onged, might have had the same superstition especting them. On some of the corpses in- erred in this island marks of burning were ob- erved. The ashes deposited in an urn, which was covered on the top with a flat stone, have een found in the cell of one of the barrows. This coffin or cell was placed on the ground, hen covered with a heap of stones, and that again cased with earth and sods. Both barrow and contents evince them to be of a different age rom the former. These tumuli were in the nature of family vaults: in them have been ound two tiers of coffins. It is probable, that on the death of any one of the family, the tumulus was opened, and the body interred near its kindred bones. Ancient Greece and Latium concurred in the same practice with the natives of this island. Patroclus among the Greeks, and Hector among the Trojans, received but the same funeral honors with our Caledonian heroes; nd the ashes of Dercennus the Laurentine onarch had the same simple protection. The rn and pall of the Trojan warrior might per- ps be more superb than those of a British der: the rising monument of each had the mon materials from our mother earth. See mer's Iliad. xxiv. 1003. The Grecian bar- s, however, do not seem to have been all ally simple. The barrow of Alyattes, father Crœsus king of Lydia, is described by Hero- tus as a most superb monument, inferior only he works of the Egyptians and Babylonians. was a vast mound of earth heaped on a base- nt of large stones by three classes of the ple: one of which was composed of girls, were prostitutes. Alyattes died, after a long gn, A.A.C. 562. Above a century inter- ed, but the historian relates, that to his time e stones (ὅροι termini or stelæ) on which let- s were engraved, had remained on the top, ording what each class had performed; and m the measurement it appeared, that the ater portion was done by the girls. Strabo ewise has mentioned it as a huge mound, ed on a lofty basement by the multitude of city. The circumference was six stadia or ee quarters of a mile; the height two ple- a or 200 feet; and the width thirteen plethra. was customary among the Greeks to place on rows, either the image of some animal or lar, commonly round pillars with inscriptions. e famous barrow of the Athenians in the plain Marathon, described by Pausanias, is an in- nce of the latter usage. An ancient monument in Italy, by the Appian way, called the sepulchre of the Curiatii, has the same number of termini as remained on the barrow of Alyattes, the basement which is square, supporting five round pyramids. Of the barrow of Alyattes, the apparent magnitude is described by travellers as now much diminished, and the bottom rendered wider and less distinct than before, by the gradual increase of the soil below. It stands in the midst of others by the lake Gygæus; where the burying place of the Lydian princes was situated. The barrows are of various sizes, the smaller made perhaps for children of the younger branches of the royal family. Four or five are distinguished by their superior magnitude, and are visible as hills at a great distance. That of Alyattes is greatly supereminent. All of them are covered with green turf, and retain their conical form without any sinking in of the top.

Barrows, American. Barrows are also found in great numbers in America. These are of different sizes, according to Mr. Jefferson; some of them constructed of earth, and some of loose stones. That they were repositories of the dead is obvious; but on what particular occasion constructed, is matter of doubt. Some have thought they covered the bones of those who have fallen in battles, fought on the spot of interment. Some ascribed them to the custom said to prevail among the Indians, of collecting, at certain periods, the bones of all their dead, wheresoever deposited at the time of death. Others again supposed them the general sepulchres for towns, conjectured to have been on or near these grounds; and this opinion was supported by the quality of the lands in which they are found (those constructed of earth being generally in the softest and most fertile meadow grounds on river sides), and by a tradition said to be handed down from the aboriginal Indians, that when they settled in a town, the first person who died was placed erect, and earth put about him, so as to cover and support him; that when another died, a narrow passage was dug to the first, the second reclined against him, and the cover of earth replaced, and so on. 'There being one of these barrows in my neighbourhood (says Mr. Jefferson), I wished to satisfy myself whether any, and which, of these opinions were just. For this purpose I determined to open and examine it thoroughly. It was situated on the low grounds of the Rivanna, about two miles above its principal fork, and opposite to some hills, on which had been an Indian town. It was of a spheroidical form, of about forty feet diameter at the base, and had been of about twelve feet altitude, though now reduced by the plough to 7½, having been under cultivation about a dozen years. Before this it was covered with trees of twelve inches diameter, and round the base was an excavation of five feet depth and width, whence the earth had been taken of which the hillock was formed. I first dug superficially in several parts of it, and came to collections of human bones, at different depths, from six inches to three feet below the surface. These were lying in the utmost confusion, some vertical, some oblique, some horizontal, and directed to every

point of the compass, entangled, and held together in clusters, by the earth. Bones of the most distant parts were found together; as, for instance, the small bones of the foot in the hollow of a skull, many skulls would sometimes be in contact, lying on the face, on the side, on the back, top or bottom, so as on the whole to give the idea of bones emptied promiscuously from a bag or basket, and covered over with earth, without any attention to their order. The bones of which the greatest numbers remained, were skulls, jaw-bones, teeth, the bones of the arms, thighs, legs, feet, and hands. A few ribs remained, some vertebræ of the neck and spine, without their processes, and one instance only of the bone which serves as a base to the vertebral column. The skulls were so tender, that they generally fell to pieces on being touched. The other bones were stronger. There were some teeth which were judged to be smaller than those of an adult; a skull which, on a slight view, appeared to be that of an infant, but it fell to pieces on being taken out, so as to prevent satisfactory examination; a rib, and a fragment of the under jaw of a person about half grown; another rib of an infant; and part of the jaw of a child, which had not yet cut its teeth. This last furnishing the most decisive proof of the burial of children here, I was particular in my attention to it. It was part of the right half of the under jaw. The processes by which it was articulated to the temporal bones were entire; and the bone itself firm to where it had been broken off, which, as nearly as I could judge, was about the place of the eye-tooth. Its upper edge, wherein would have been the sockets of the teeth, was perfectly smooth. Measuring it with that of an adult, by placing their hinder processes together, its broken end extended to the penultimate grinder of the adult. This bone was white, all the others of a sand color. The bones of infants being soft, they probably decay sooner, which might be the cause so few were found here, I proceeded then to make a perpendicular cut through the body of the barrow, that I might examine its external structure. This passed about three feet from its centre, was opened to the former surface of the earth, and was wide enough for a man to walk through and examine its sides. At the bottom, that is, on the level of the circumjacent plain, I found bones; above these a few stones, brought from a cliff a quarter of a mile off, and from the river one eighth of a mile off; then a large interval of earth, then a stratum of bones, and so on. At one end of the section were four strata of bones plainly distinguishable: at the other, three; the strata in one part not ranging with those in another. The bones nearest the surface were least decayed. No holes were discovered in any of them, as if made with bullets, arrows, or other weapons. I conjectured that in this barrow might have been 1000 skeletons. Every one will readily seize the circumstances above related, which militate against the opinion that it covered the bones only of persons fallen in battle; and against the tradition also which would make it the common sepulchre of a town, in which the bodies were placed upright, and touching each other. Appearances certainly indicat
derived both origin and growth from
customary collection of bones, and d
of them together; that the first collec
been deposited on the common surfa
earth, a few stones put over it, and th
vering of earth; that the second had
on this, had covered more or less of
portion to the number of bones, and
also covered with earth, and so on.
lowing are the particular circumstanc
give it this aspect. 1. The number
2. Their confused position. 3. Their
different strata. 4. The strata in one pa
no correspondence with those in another.
different states of decay in these strat
seem to indicate a difference in the tin
humation. 6. The existence of infa
among them. But on whatever occa
may have been made, they are of con
notoriety among the Indians: for a party
about thirty years ago, through the pa
country where this barrow is, went thr
woods directly to it, without any instru
enquiry; and having staid about it so
with expressions which were constru
those of sorrow, they returned to the h
which they had left about half a dozen
pay this visit, and pursued their journey.
another barrow, much resembling this i
grounds of the south branch of the She
where it is crossed by the road leading
Rockfish gap to Staunton. Both of th
within these dozen years, been cleared
trees and put under cultivation, are
duced in their height, and spread in
the plough, and will probably disappear
There is another on a hill in the Blue
mountains, a few miles north of We
which is made up of small stones th
gether. This has been opened and
contain human bones as the others do
are also many others in other part
country.' In South Africa, to the nort
Hottentots, innumerable barrows are
to have been seen by Dr. Sparrow, (T
264.) In New Caledonia, also, Mr. Foster
a barrow four feet high, surrounded b
closure of stakes. But the most rece
veries of the kind, in countries remo
all intercourse with Europe, have be
by Mr. Oxley during his expedition in
terior of New South Wales, in 1817
his return, he passed two native buria
The first presented a raised mound
under which were some ashes; but ther
decisive proof whether they were from
bones. A semicircular trench was d
one side of the barrow, as if designed
seats for persons in attendance. Th
appeared not to have been constructed
a year or two; and, from the care dis
it, evidently belonged to some personag
tinction. The form of the whole was
cular. Three rows of seats occupied
the grave and an outer row of seats t
The seats formed segments of circles
forty to fifty feet, and were raised b
being trenched up between them. T

ped into an oblong cone, five feet
nine long. On opening this barrow, a
wood presented itself, about two feet
he surface, forming a sort of arch, which
d the upper cone. Beneath this were
veral sheets of dry bark; then dry grass
s, to which no damp had ever pene-
The body, which was fresh enough to
mely offensive, was deposited, at the
four feet, in an oval grave, as many
, and about two feet broad. The legs
t quite up to the head, and the arms
ced between the thighs. The face was
ds. The direction of the corpse was
west, the head being to the east. The
s carefully wrapped in a great number
um skins. The head was bound round
ommon net and girdle of the natives.
whole was a larger net. Two cypress
re to the west and north of this barrow,
bout fifty feet. The sides of them to-
e sepulchre were barked, and curious
s were deeply engraven in them.

ow, LITTLE, a river of Ireland, which
the Barrow, about four miles east of
gton.

ow, POINT, a cape on the south coast
d, in the county of Cork, five miles
Kinsale. Long. 8° 21′ W., lat. 51°

ow's STRAIT, a considerable strait of the
Ocean, so named by Captain Parry, in
is voyages, in honor of Mr. Barrow of
ralty.

ow UPON SOAR, a village in Leicester-
e birth place of bishop Beveridge. It
ted for producing a hard blue stone,
hen calcined, makes a lime fit for a
ment, and adapted to all works under
The Barrow blue stone was conveyed to
e for the building of the pier and was
succeed, after the Dutch tarras mortar
d.

ows, in the salt works, are wicker cases,
the shape of a sugar loaf, wherein the
t to drain.

STOBRICK, a rocky moorish hill, in
y of Kirkcudbright and parish of Tong-
here the unfortunate Mary, Queen of
sted and refreshed herself with a few
iends, in 1568, after the fatal battle of
; on her way to the Abbey of Dun-
From this circumstance the farm on
of Barrstobrick has ever since been
ueen's Hill.

UEL (Augustin), a French ecclesiastic,
erary man of some eminence during the
volution, commenced his career in 1774,
ode on the accession of Louis XVI.
r he united with Freron in the compo-
the Année Litteraire. In 1788 he
editor of Le Journal Ecclesiastique,
carried on till July 1792. In 1794 he
ped, from the opposition his sentiments
red in Paris, to England, and published
ry of the French Clergy during the Re-
In 1796 appeared the first two volumes
rk by which he is best known, Memoirs
tory of Jacobinism, Impiety, and Anar-
remaining part of which followed some
years after. Though an exaggerated production, it supplies many facts not otherwise to be found recorded. He returned to France in 1802, and did Oct. 5, 1820, at the age of seventy-nine.

BARRULET, in heraldry, the fourth part of the bar, or the one half of the closset, an usual bearing in coat-armour.

BARRULY, in heraldry, is when the field is divided bar-ways, that is, across from side to side, into several parts.

BARRY (James), a celebrated painter, was born at Cork on the 11th of October, 1741. His father's occupation was that of a coasting-trader, and, anxious to engage his son in the same business, he carried him along with him in several voyages. The mind of Barry, however, averse to such an employment of his talents, was engaged at all leisure moments in sketching and drawing; and his father, perceiving the impossibility of fixing his choice in a seafaring profession, allowed him at last to pursue the natural bias of his disposition. His eager thirst of knowledge, and his persevering industry in acquiring it, now excited the admiration of all his acquaintance, and carried him forward to improvement and information far beyond his years. He read all the books that his slender finances could command, or the kindness of his friends supplied; and his unwearied diligence allowed him no time for frivolous amusement, and little for repose. But he devoted a part of every day to the exercise of his pencil, and at a very early age furnished designs for a volume of fables, printed by an Irish bookseller. He was seventeen years old when he attempted oil painting; but his progress in this first art must have been extremely rapid, and his execution of individual pieces uncommonly quick, since we find him in less than five years not only finishing several large paintings, but producing that work which drew him from the obscurity of a provincial town, and gave him a high place among the artists of his country. The subject that he chose for this picture was an old traditionary story concerning the arrival of Saint Patrick in Ireland; and as soon as he had finished it he set out with it for Dublin. Without acquaintance or recommendation of any kind, he obtained leave to expose his piece in an exhibition of paintings, which was just opening upon his arrival, and had the happiness to see it marked out by public approbation and applause. He shortly after was introduced to the acquaintance, and soon obtained the friendship, of Burke. With that great man he repaired to London, as a better field for the display of his talents, and, under his patronage, was introduced to several artists of eminence. The talents of Mr. Barry were here universally acknowledged to be great; but in proportion as nature had been liberal, his friends and himself felt the importance of seconding her views, by embracing every attainable opportunity of improving her gifts. The most important part of a painter's education having for a long time been considered to be a short residence in Rome, Barry, was enabled to visit, by the assistance of the Burkes, that seat of the arts. There he remained nearly five years, engaged in the deepest researches on the principles of his art, and in the most laborious examination of its noblest specimens. For three years, ne mentions in a letter to Sir Joshua Reynolds, he was so completely occupied in studying the inimitable models of perfection bestowed upon the world by the genius of Michael Angelo, Raphael, Titian, Guido, and other celebrated masters, that he could not spare two hours for any other employment. Nor was any of this portion of his time spent in copying them,—it was entirely devoted to a minute and critical examination of their peculiar manner and characteristic excellencies. In 1771 he returned to his native country, and soon displayed the extent of his powers, and the improvement of his taste, in several masterly appeals to public admiration. His first was a Venus, in which he embodied an amazing assemblage of beauty and grace. The subject he chose for the following year was likewise mythological, being a representation of Jupiter and Juno on Mount Ida. But Mr. Barry's chief object of ambition was to be employed in some national work, which should raise the character of his country, while it should confer permanent reputation on his own name. He had beheld at Rome the works of Raphael and Michael Angelo on the walls of the Vatican, and he saw what splendor magnificent edifices, and noble designs in painting, mutually diffused over each other. He therefore concurred with alacrity in a proposal made to decorate the cathedral of St. Paul's with paintings, and offered his services as one of the artists. But this design was reliquished, owing to the opposition of the primate and the bishop of London. A proposal that was made soon afterwards to Barry and his brother artists, to decorate the great hall of the Society of Arts with historical and allegorical paintings, failed, to his great mortification, like the former. Bent on his great object, he offered to execute this work by himself, and the only condition that he stipulated for was, that he might be allowed to proceed to the end of his designs without interference or control. The condition was agreed to, and the work will remain a lasting monument of his fame. We have not space in this short sketch to describe his beautiful and ingenious designs; we must therefore refer our readers to his own writings for their details, and to the pictures themselves, for a knowledge of the feeling of that excellence; to which his own description can do justice no more than that of others can convey. Dr. Johnson observed, upon seeing them, that they displayed a grasp of mind which was nowhere else to be found. This great work was unproductive of emolument to the author. But the society voted him their gold medal, 250 guineas at different periods, and allowed him the profits of exhibitions, which amounted to £500. It is not very pleasing to follow the artist through the remaining part of his life. In 1777 he was made a Royal Academician, and in 1780 professor of painting in the academy, which situation he lost in 1799, in consequence of his extreme anxiety to induce the academy to appropriate the receipts of the exhibitions to the formation of a gallery of old masters for the use of the pupils. Soon after, the earl of Buchan set on foot a subscription for him, which amounted to about £1000. With this it was intended to purchase an annuity for him, when he was seized with a pleuritic fever, which carried him off on the 22d of February, 1806, aged sixty-five. 'Mr. Barry, as an artist,' Mr. Hazlett has well said, 'as a writer, and a man, was distinguished by great inequality of powers and extreme contradictions in character. He was gross and refined at the same time; violent and urbane; sociable and sullen; inflammable and inert; ardent and phlegmatic; relapsing from enthusiasm into indolence; irritable, headstrong, impatient of restraint; captious in his intercourse with his friends, wavering and desultory in his profession. In his personal habits he was careless of appearances or decency, penurious, slovenly, and squalid. He regarded nothing but his impulses, confirmed into incorrigible habits. His pencil was under no control. His eye and his hand seemed to receive a first rude impulse, to which he gave himself up, and paid no regard to any thing else. The strength of the original impetus only drove him farther from his object. His genius constantly flew off in tangents, and came in contact with nature only at salient points. His enthusiasm and vigor were exhausted in the conception; the execution was crude and abortive. His writings are a greater acquisition to the art than his paintings. The powers of conversation were what he most excelled in; and the influence which he exercised in this way over all companies where he came, in spite of the coarseness of his dress, and the frequent rudeness of his manner, was great. Take him for all in all, he was a man of whose memory it is impossible to think without admiration as well as regret.' Towards the close of life he was doubtless occasionally deranged. His works are collected in two quarto volumes, 180 of which his Lectures are deemed the best part.

Barry (Girald), commonly called Giraldus Cambrensis, Girald of Wales, an historian and ecclesiastic in the reigns of Henry II. and Richard I., was born at the castle of Manorbier near Pembroke, A. D. 1146. By his mother he was decended from the princes of South Wales, and his father, William Barry, was one of the chief men of that principality. Being a younger brother, and intended for the church, he was sent to St. David's, and educated in the family of his uncle, who was bishop of that see. He acknowledges, in his history of his own life and actions, that in his youth he was too playful; but being reproached for it by his preceptors, he became a very hard student, and excelled all his school fellows. When he was about twenty years of age he was sent, A. D. 1166, for improvement, to the university of Paris; where he continued five years. On his return to Britain he entered into holy orders, and obtained several benefices in England and Wales. Observing that his countrymen were backward in paying the tithes of wool and cheese, which he was afraid would involve them in eternal ruin, he applied to Richard, archbishop of Canterbury, and was appointed his legate in Wales for rectifying that disorder. He executed his commission with great spirit, excommunicating all who refused to save their souls by surrendering the tithes of cheese and wool. Not satisfied with enriching, he also attempted to reform, the clergy; and reported the archdeacon of Brecon, for the unpardonable ine of matrimony. The poor old man refusing put away his wife, was deprived of his arch- aconry; which was bestowed upon our zealous gate. His great vigor involved him in many arrels. His uncle, the bishop of St. David's, ing A. D. 1176, he was elected his successor the chapter: but this election having been ade contrary to the inclination of Henry II. e did not insist upon it, but went again to aris to prosecute his studies, in the civil and anon law, and theology. Having spent about our years at Paris, he returned to St. David's, where he found every thing in confusion; and the bishop being expelled by the people, he was appointed administrator by the archbishop of Canterbury, and governed the diocese in that capacity till A. D. 1184, when he was restored. About the same time he was called to court by Henry the Second, appointed one of his chaplains, and sent into Ireland A. D. 1185, with prince John. By this prince he was offered the united bishoprics of Fernes and Leighlin, but declined them, and employed his time in collecting materials for his Topography of Ireland, and his history of the conquest of that island. Having finished the former work, which consisted of three books, he published it at Oxford, A. D. 1287, in the following curious manner, in three days. On the first day he read the first book to a great concourse of people, and afterwards entertained all the poor of the town; on the second day he read the second, and entertained the doctors and chief scholars; and on the third day he read the third book, and entertained the young scholars, soldiers, and burgesses. 'A most glorious spectacle!' says he, 'which revived the ancient times of the poets, and of which no example had been seen in England.' He attended Baldwin, archbishop of Canterbury, in his progress through Wales, A. D. 1186, in preaching a croisade for the recovery of the Holy Land; in which he tells us he was far more successful than the primate; and that the people were prodigiously affected with his Latin sermons, which they did not understand, melting even to tears, and coming in crowds to take the cross. Although Henry II. entertained the highest opinion of his abilities, he never advanced him to any higher dignity in the church on account of his relation to the princes of Wales. But on the accession of Richard I. A. D. 1189, his prospects of preferment became better, for he was sent for by that prince into Wales to preserve the peace of that country, and joined in commission with William Longchamp, bishop of Ely, as one of the regents f the kingdom. He did not however, improve his favorable opportunity, refusing the bishopric f Bangor in A. D. 1190, and that of Landaff the ear after, having fixed his heart on the see of t. David's, the bishop of which was very old and firm. In A. D. 1192 the state of public affairs d the course of interest at court became so un- vorable to our author's views, that he deter- ined to retire. At first he resolved to return Paris to prosecute his studies; but meeting ith difficulties in this, he went to Lincoln, here William de Monte read lectures in theo- gy with great applause. Here he spent about x years studying divinity, and composing various works. The see of St. David's, which had long been the object of his ambition, now became vacant, (A. D. 1198) and brought him again upon the stage. He was unanimously elected by the chapter; but met with so powerful an adversary in Hubert, archbishop of Canterbury, that it involved him in a litigation which lasted three years, cost him three journeys to Rome, at a great expense, and in which he was at last defeated, A. D. 1203. Soon after, he retired from the world, and spent the last seventeen years of his life in a studious privacy, composing many books, of which we have a catalogue in the Biographia Britannica. That Girald of Wales was a man of uncommon activity, genius, and learning, is undeniable; but these and his other good qualities were much tarnished by his insufferable vanity, which must have been as offensive to his contemporaries, as it is disgusting to his readers.

Barry (James, baron Santry), was also a descendant of the ancient princes of Wales. Being bred to the law, he was appointed king's serjeant for Ireland in 1629. In this station he was noticed by Lord Wentworth, afterwards earl of Strafford, who promoted him to be second baron of Exchequer in 1634. Barry was not ungrateful. In 1640, when the Irish parliament proposed sending over a committee to impeach Lord Strafford, he did his utmost to oppose the measure, though his efforts proved fruitless. During the commotion and revolution that followed, we hear nothing of Mr. Barry; but in 1660 he was appointed chairman of the Convention, which voted for the restoration of monarchy; and in the end of that year, king Charles II. showed his opinion of his services, by appointing him Lord Chief Justice of the King's Bench, and a privy counsellor, and creating him a peer of Ireland. He did not live to see a third revolution, for he died in 1672.

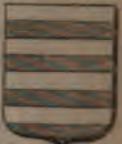
Barry, a hill of Scotland, in Angusshire, three miles north of Belmont, and 688 feet in height. Tradition says, that queen Guinever or Vanora, the wife of Arthur king of the Britons, was confined upon it, after having been taken prisoner in a battle between that prince and the Scots and Picts. Dr. Playfair has given the following particular account of this hill. 'Barry-hill, the supposed place of Vanora's confinement, merits some description. It is one of the Grampians, one mile and a half north-east of Alyth. It commands an extensive view of Strathmore, and of several remarkable hills in the Sidlaw range, viz. Dunsinnan, Kinpurnie, Sidlaw, Finhaven, &c. all of which might have been anciently used as watch towers, or places of defence. History informs us that the Picts kept possession of Dunbarry, and the adjacent country, from a remote period to the ninth century, or later; but the precise dates of their settlement in these parts, and of their expulsion, cannot be ascertained. The hill itself is of an oval form. Its summit was levelled into an area 180 feet long, and seventy-two or seventy-four broad. Around the area a mound of earth was raised, from six to eight feet high, and ten to twelve broad at top. On this mound a wall of free stone was built without any cement whatever. The foundation of the wall was composed of rough granite, and still remains. It is of the same breadth with the summit of the mound; but the height of the wall cannot be known; Gordon's estimate of it is extremely erroneous. Among the ruins there are several pieces of vitrified stone; but these vitrifications must have been accidental, as they are few and inconsiderable. Along the west and north borders of the area, barracks, or huts, were built of dry stone, and sufficiently sheltered by the mound and wall; but no structures of this sort can be traced in the south part of the area. As the north and west sides of the hill are steep, and of difficult access, there was no need of an outer ditch in those quarters: but, towards the south and east, where the hill gently slopes, there is a ditch ten feet broad, and from twelve to sixteen feet below the foundation of the wall. At the south-east extremity of the fort, a narrow bridge was raised over the ditch, eighteen feet long, and two broad, except towards each end, where the breadth was increased. It was composed of stones laid together with much art and vitrified above, below, and on both sides; so that the whole mass was firmly cemented. That an opening was left below after the process was finished is doubtful. On the upper part of the bridge a stratum of gravel was laid, to render the passage smooth and easy. This is the sole part of the fort intentionally vitrified. A few yards distant from the ditch there is an outer wall, the foundation of which is about three feet lower than the summit of the mound. The approach to the fort is from the north-east, along the verge of a precipice; and the entrance was secured by a bulwark of stone, the ruins of which are extant. There is no vestige of a well within the fort; but westward, between the basis of the mound and the precipice, there was a deep pond or lake, recently filled up by the tenants in that neighbourhood. About a quarter of a mile eastward, on the declivity of the hill, there are some remains of another oval fort, of less extent than the preceding, consisting of a strong wall and ditch. Tradition says, that there was a subterranean communication between these forts, which is not improbable. From the account now given, it would appear, 1. That both were constructed before the Romans introduced the art of building with lime and other cement. 2. That the Picts and ancient Scots had stone edifices, which M'Pherson is not inclined to admit. 3. That they sometimes vitrified particular parts of their forts, to render them the more durable.

BARRY, Barra, or Bara, one of the western isles of Scotland, lying in the Atlantic Ocean; eight miles south from that of South Uist. Its extent has been strangely misrepresented, some stating it at five miles long and three broad, and others reducing it to a mere rock, half a mile in circumference, and inhabited only by solan geese and wild fowls! It is at least twelve English miles long, and from three to six broad; being intersected in different places by arms of the sea; separated from the island of Watersay, by a channel of one mile. It has a barren appearance, from the great quantity of rocks to be seen every where; but on the north end, in good seasons, it may vie in fertility with any ground of equal extent in Scotland. In the middle and south end there are very high hills, which are a mixture of green, rock and heath, and seem fitted for sheep-walks, if the island were near a good market. The west coast is low and flat; the soil, fine shell sand, in many parts very fertile; but the ground rises to the east coast, where it is barren, and breaks off abrupt, irregular, and steep. In some parts, where the soil is rocky and uneven, it admits not of being plowed; it is cultivated, therefore, by a kind of crooked spade, called cashroom. The inhabitants are about 1500. Long. 7° 30′ W., lat. 56° 55′ N.

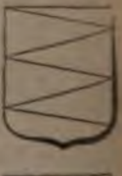
Barry, a town of Ireland, in the county of Longford, fifty-four miles from Dublin.

Barry, a small island in the Bristol channel, near the south coast of Wales; distant three miles west of Flat Holm. Its name is said to be derived from a hermit, St. Baruch, who died there in 700. Giraldus Cambrensis states, that in a rock near the entrance of the island there is a small cavity, to which, if the ear be applied, a noise is heard like that of smiths at work, the blowing of bellows, strokes of hammers, grinding of tools, and roaring of furnaces,' and Sir Richard Hoare adds, that towards the southern part of the island, on a spot, called Nell's point, is a fine well, to which great numbers of women resort on Holy Thursday: having washed their eyes at the spring, each drops a pin into it. The landlord of the boarding-house (for the island is frequented by bathers) informed Sir Richard Hoare, that in the last cleaning of the well he took out a pint of these votive offerings.

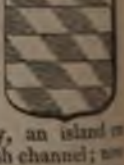
Barry, in heraldry, is when an escutcheon is divided bar-ways, that is, across from side to side, into an even number of partitions, consisting of two or more tinctures, interchangeably disposed. It is to be expressed in the blazon by the word barry, and the number of pieces must be specified; but if the divisions be odd, the field must be first named, and the number of bars expressed.



Barry-bendy is when an escutcheon is divided evenly, bar and bendways, by lines drawn transverse and diagonal, interchangeably varying the tinctures of which it consists, thus:



Barry-pily, is when a coat is divided by several lines drawn obliquely from side to side, where they form acute angles, thus:



BARSA, in ancient geography, an island on the coast of France, in the English channel; now called Basepool, according to some; according to others, Bardsey.

BARSABAS; from בר, a son, and צבא, rest, a name of Joseph, surnamed Justus, who was competitor with Matthias for the apostleship, and is said to have been one of the seventy disciples.

Barsabas (Judas), a member of the synod at

em, who was sent with Paul, Barnabas,
as, to publish their decree against the
ng teachers among the Gentile churches
och. He is also styled a prophet: Acts

SAC, a town of France, in Guienne, in
ardelois, on the left bank of the Garonne;
s 480 houses, and belongs to the depart-
f the Gironde, arrondissement of Bour-
eighteen miles south-east of Bourdeaux.
ted for its excellent wine.

SALLACH, POINT, a cape of Scotland,
coast of the county of Wigton, in the bay
, eight miles north-west of Burrowhead.
° 35′ 17″ W., lat. 54° 48′ N.

SALLI, or BARSALLO, a kingdom of
bordering on the Gambia, inhabited by a
negroes called Jaloffs. Their govern-
a despotic monarchy; all people being
to prostrate themselves on the earth when
the royal family makes his appearance.
vided in to a number of provinces, over
governors are appointed, called bumeys.
ahommedan is the professed religion, but
gard is paid to that part of the impostor's
hich forbids the use of wine; for the king
live without brandy; nor is he ever more
than when he is intoxicated. When he
a fresh supply of this liquor, or of any
commodity, he seizes a certain number of
jects, and sells them as slaves.

SANIANI, in church history, a sect who
e errors of the Severians and Theodosians.

SANTI (Francisco), an eminent musi-
former and composer, was born at Lucca
1690. He studied the civil law in the
sity of Padua; but after a short stay there
ed music, and put himself under the tui-
f some of the ablest masters in Italy.
g attained to a considerable degree of
ency in practical composition, he resolved
e in England, and came hither with Ge-
i, in 1714. He was a good performer on
utboy and flute. He was many years a
ner at the opera-house; and at last went
tland, where he improved the music of
untry, by making basses to a great num-
the most popular Scots tunes. About
he returned to England; but, being ad-
in years, he went into the opera band
erformer on the tenor violin; and in the
r season into that of Vauxhall. At this
e published twelve concertos for violins;
ortly after, Sei Antifone, in which he en-
red to imitate the style of Palestrina, and
composers of motets; but so little profit
d, that, towards the end of his life, the
y and economy of an excellent wife, whom
married in Scotland, and the labors of a
er whom he had qualified for a singer, but
fterwards became an actress at Covent
n, were his chief supports. Miss Barsanti
n the stage in consequence of her entirely
her singing voice by catching cold. Col-
ngaged her as a comic actress for the
rket theatre, and she gained great ap-
She afterwards went to Ireland, became
ite there, and married Mr. Daly, the
r of the Dublin theatre.

BARSE, in ichthyology, an English name for the pearch, still used for the same fish in the Saxon language, and one of the many Saxon words we have retained.

BARSICK, a head land on the coast of the island of South Ronaldshay, one of the Orkneys, which is 250 feet perpendicular above the level of the sea.

BAR-SUR-AUBE. See BAR.

BAP-SUR-SEINE. See BAR.

BA'RTER, *v.* & *n.*
BAR'TERER,
BAR'TERY.
} Fr. *barater*; Ital. *barratare*; Span. *barrator*, from *barat*, craft, fraud. It is now, however, no longer used in this ill sense. It signifies a particular mode of exchange. Exchange is the general term signifying to take one for another. To barter is to exchange one article of trade for another. The words that bear a near affinity to this are truck and commute; but their precise difference is this: truck is a familiar term to express a familiar action for exchanging one article of private property for another; and commute is applied to the exchanging one mode of punishment for another. We may exchange one book for another; traders *barter* trinkets for gold-dust; coachmen truck a whip for a handkerchief; government commutes the punishment of death for that of banishment.

> For him was I exchang'd and ransom'd;
> But with a baser man of arms by far
> Once, in contempt, they would have *barter*'d me.
> *Shakspeare.*

> From England they may be furnished with such things as they may want, and in exchange or *barter* send other things with which they may abound. *Bacon.*

> As if they scorn'd to trade and *barter*,
> By giving or by taking quarter. *Hudibras.*

> A man has not every thing growing upon his soil, and therefore is willing to *barter* with his neighbour. *Collier.*

> I see nothing left us, but to truck and *barter* our goods, like the wild Indians, with each other. *Swift*

> He who corrupteth English with foreign words, is as wise as ladies that exchange plate for china; for which the laudable traffick of old clothes is much the fairest *barter*. *Felton.*

> It is a received opinion, that, in most ancient ages, there was only *bartery* or exchange of commodities amongst most nations. *Camden's Rem.*

> Then as thou wilt dispose the rest,
> To those who, at the market rate,
> Can *barter* honour for estate. *Prior.*

> If they will *barter* away their time, methinks they should at least have some ease in exchange. *Decay of Piety.*

> He also *bartered* away plums, that would have rotted in a week, for nuts that would last good for his eating a whole year. *Locke.*

> At the same time those very men tear their lungs in vending a drug, and show no act of bounty, except it be that they lower a demand of a crown to six, nay to one penny. We have a contempt for such paltry *barterers*. *Tatler*, No. 4.

> The most ancient and most obvious sort of commercial contract is *barter*, or the exchange of goods for goods. But, where there is no other sort of commerce, contracts of *barter* must be liable to great inequalities. *Beattie. Moral Science*

> Some men are willing to *barter* their blood for lucre. *Burke.*

Barter. See Arithmetic, Index.

Barth, or **Bart** (John), a French admiral, born at Dunkirk in 1651. He left his father, who was a poor fisherman, and entered into the navy, where he distinguished himself by his valor. Having, in 1692, obtained the command of a squadron of frigates and a fire ship, he destroyed eighty-six English merchant ships, made a descent on the English coast, near Newcastle, where he set fire to several houses, and returned to Dunkirk with prizes valued at 500,000 crowns. In 1696 he was appointed with a squadron of six ships, to convoy a fleet laden with corn, and before he fell in with it, it had been captured by a Dutch squadron of eight men of war. Though his numbers and strength were so much less, he not only retook the prizes, but the war ships. For this action a patent of nobility was granted him. He died at Dunkirk in 1702.

BARTHELEMY (John James), a celebrated French writer, born at Cassis, in Provence, in 1716. He was sent to school at Marseilles, and admitted into the college of the Oratory, where his promising genius was discovered, and encouraged, so that he made a rapid progress in learning. But his design being for the church, it was necessary for him to leave the Oratory, and go for philosophy and theology to the Jesuits. Here he acquired, more by his own labor and perseverance than by the instructions of the professors, a knowledge of the Greek, Hebrew, Chaldean, Syriac, and Arabic languages. Before Barthelemy left Marseilles, and when about twenty-one years of age, the merchants of that city having met with a Jew boasting of his learning, and wishing trial to be made, by introducing him to some learned man, with some difficulty got him to engage with the Jew; and Barthelemy came off with the character of a prodigy of oriental learning. After finishing his education at the seminary, he retired to Aubagne, and spent some time with his family, by whom he was highly esteemed. But he often visited Marseilles, for the company of learned men; and he was particularly taken up with one M. Cary, who had a fine cabinet of medals and an extensive library. He also associated himself with Father Sigaloux, in making astronomical observations. At last, however, he resolved to devote himself to literature, and accordingly went to Paris in 1744. He was recommended to M. de Boze, keeper of the medals, and secretary of inscriptions and belles lettres, who received him kindly, and paid him every possible attention; and, in a short time, on account of the age and infirmity of M. de Boze, Barthelemy was chosen his assistant in the care of the cabinet of medals; in arranging which he labored incessantly. Sometime after he was nominated secretary to the academy of inscriptions; and on the death of his colleague M. de Boze, in 1753, he succeeded him as keeper of the cabinet. In 1755 he visited Rome and Naples; the latter being then peculiarly interesting to an antiquarian by the recent discoveries in its neighbourhood. Here, among the numberless curiosities that drew his attention, the manuscripts saved from the ruins of Herculaneum were particularly noticed; and he was anxious to have a specimen of the ancient writing in the Greek MSS. but those who had the care of them, from their injunctions, could not gratify him. On this he begged a sight of a page for a few minutes. It contained twenty-eight lines, which he read over attentively, and, retiring to a corner, transcribed the whole, and sent the fac-simile to the academy of belles lettres. About the end of 1756, the duke de Choiseul, having been appointed minister for foreign affairs, gave him a pension of £250, and in 1765 conferred on him the treasurership of St. Martin de Tours, to which in 1758, he added the place of secretary-general to the Swiss guards In 1768 appeared his great work, the fruit of thirty years labor, entitled, The Voyage of the younger Anacharsis in Greece; in which the traveller gives an account of the customs, government, and antiquities of the country he visited; remarks on the music of the Greeks, on the library of the Athenians, and on the customs of all the surrounding states. In 1789 Barthelemy became a candidate for a chair in the French academy; and so great was the reputation he had gained by his writings, that this learned body elected him by acclamation. The speech he delivered on the occasion, for modesty and simplicity, is deservedly celebrated. In consequence of the revolution, he was reduced to a pittance merely sufficient to furnish the necessaries of life; yet, in 1790, when M. de St. Priest offered him the place of librarian to the king, he expressed his gratitude, but declined accepting, lest it should interfere with his occupations in the cabinet, which he still continued to enrich. In 1792 his strength began to fail, and, in 1793, now a feeble old man, he was arrested as an aristocrat, and hurried to prison; but was liberated the same night, by order of the committee. He died in 1795, regretted by all his relations as their common father. Besides his Anacharsis, he was author of many papers, principally on medals, in the collection of the academy of inscriptions, &c.

Barthelemy (St.), a town of France, in the department of the Lot and Garonne, arrondissement of Marmande, with 2300 inhabitants. [illegible] miles east of Marmande, and twenty-four north-west of Agen.

BARTHIUS (Gaspar), a learned and copious writer, born at Custrin, in Brandenburg, in 15[illegible]. Mr. Baillet, in his Enfans Celebres, tells us, that at twelve years of age he translated David's Psalms into Latin verse of every measure, and published several Latin poems. Upon the death of his father (who was professor of civil law at Frankfort, counsellor to the elector of Brandenburg, and his chancellor at Custrin), he was sent to Gotha, then to Eisenach, and afterwards, according to custom, went through all the different universities in Germany. He afterwards visited Italy, France, Spain, England, and Holland, improving himself by the conversation and writings of the learned in every country. He studied all the modern languages, and his translations from the Spanish and French show that he was not content with a superficial knowledge. Upon his return to Germany he led a retired life at Leipsic, his passion for study having made him renounce all sort of employment. He wrote a vast number of books; the principal of which are, 1. Adversaria, a large volume in folio; the second and third volumes of which he left in

A Translation of Æneas Gazæus. 3. volume of Notes upon Claudian, in 4to. large volumes upon Statius, &c. He Leipsic, in 1658, aged seventy-one.

HOLINA, in botany, a genus of plants, fter the naturalist Bartholinus. Class der, gynandria monogynia. Natural rchideæ. Essential character: CAL. tu- the base: PET. united to the base of the se spur is shorter than the germen. Stalks ollen elongated; their cells laterally lands distinct, half covered by the ex- be. The principal species is, B. pecti- inged bartholina.

THOLINUS (Gaspar), a learned phy- nd anatomist of the seventeenth cen- rn at Malmoe, in Schonen, which then d to Denmark. At three years of age such a quick capacity, that in four- s he learned to read; and, in his 13th composed Greek and Latin orations, nounced them in public. When he was ighteen he went to the university of agen, and afterwards studied at Rostock ttemberg. He afterwards travelled, and d no opportunity of improving himself lifferent universities which he visited. , in 1613, chosen professor of physic in versity, which he enjoyed eleven years; falling into a dangerous illness, he made that if it should please God to restore would solely apply himself to the study ity. He recovered and kept his word; on after obtained the professorship of , and the canonry of Roschild. He died 9, having written several small works, on metaphysics, logic, and rhetoric.

HOLINUS (Thomas), a celebrated physi- n of the former, born at Copenhagen, in After studying some years in his own , he, in 1637, went to Leyden, where he physic three years. He then travelled nce; and resided two years at Paris and lier, for improvement. Afterwards going , he continued three years at Padua; and th went to Basil, where he obtained the of doctor of philosophy. Soon after, he d to Copenhagen; where, in 1647, he pointed professor of mathematics; and, , of anatomy, a branch better suited to us and inclination; which he discharged eat assiduity for thirteen years, and dis- ed himself by making several discoveries spect to the lacteal veins and lymphatic

His close application, however, having d his constitution very infirm, he, in esigned his chair; but the king of Den- lowed him the title of honorary professor. retired to a little estate he had purchased sted, near Copenhagen, where he hoped spent the remainder of his days in peace nquillity; but his house being burnt in is library, with all his books and MSS. troyed. In consideration of this loss the pointed him his physician, with a hand- alary, and exempted his land from all the university of Copenhagen also ap- him their librarian; and, in 1675, the him the honor to give him a seat in the ouncil of Denmark. He wrote, 1. Anatomia Caspari Bartholini Parentis, novis Observationibus primum locupletata. 8vo. 2. De Monstris in Natura et Medicina, 4to. 3. De Armillis Veterum, 8vo; and several other works. This great man died in 1680.

BARTHOLOMEW (St.); from בר, a son, חלה, elevating, and מים, waters; one of the twelve Apostles, and generally believed to be the same with Nathanael, for the following reasons; 1. John never mentions Bartholomew but Nathanael; 2. the other Evangelists never mention Nathanael but Bartholomew: 3. John classes Philip and Nathanael, as the others do Philip and Bartholomew: 4. Nathanael is mentioned with the other apostles that met our Lord, after his resurrection, at the sea of Tiberias: and 5. Bartholomew is not a proper name, but a patronymic signifying the son of Tolmai or Thilomæus; a mode of denomination common among the Hebrews, and other ancient nations (see BARJONAS), and which still prevails in some modern nations; for instance in Russia, where Petrowitz, Alexiowitz, Alexandrowitz, &c. signify, the son of Peter, Alexis, Alexander, &c. It is said that this apostle travelled as far as India, to propagate the gospel: and Eusebius relates, that a famous philosopher and Christian, named Pantænus, desiring to imitate the apostolical zeal in propagating the faith, and travelling for that purpose as far as India, found there, among those who yet retained the knowledge of Christ, the gospel of St. Matthew, written by St. Bartholomew. From thence he returned to the more northern and western parts of Asia, and preached to the people of Hierapolis; then in Lycaonia; and lastly, at Albania, a city upon the Caspian Sea,; where his endeavours to reclaim the people from idolatry were crowned with martyrdom, he being flead alive, and crucified with his head downwards.

BARTHOLOMEW, CAPE, the southernmost point of Staten-Land, in Le Maire straits, at the south extremity of South America.

BARTHOLOMEW, ST., one of the Caribbee islands, to which, in 1748, a colony was sent by the French, by whom it was ceded to Sweden in 1785. It is reckoned about fifteen miles in circumference, and is now the only island which Sweden possesses in the Columbian Archipelago. It is very fertile, producing sugar, tobacco, cotton, indigo, and cassava, but having no water, except what is supplied by the rains, is not much resorted to. Many of the trees are valuable; the aloe is held in high estimation, and there are others from which a gum of excellent cathartic qualities is extracted. The branches of the parotane growing downwards, take root and rise in fresh stems; forming an almost impenetrable barrier. The species called sea trees, line many parts of the shore. The island also produces lignum vitæ and iron-wood; and a great variety of birds. The inhabitants also export a peculiar kind of lime-stone. The coast is surrounded with rocks, and cannot be safely approached without a pilot; but it has a very capacious and well-sheltered harbour, capable of receiving and sheltering the largest ships. About half the inhabitants are Irish Roman Catholics, whose ancestors settled here in 1666.

BARTHOLOMEW, ST. a river of South America, in the province of Antioquia, which falls into the Madalena.

Bartholomew (St.), one of the islands of the New Hebrides, in the South Pacific, three leagues from the north-west point of Mallicolo, from which it is separated by a channel, called Bougainville's passage. It is from six to seven leagues in circumference. Long. 169° 23′ E., lat. 15° 41′ S.

Bartholomew's Day (St.), a festival of the Church, celebrated on the 24th of August. This day has been rendered infamous in the annals of France, for the massacre of the protestants in 1572, by the order of the bloody Catharine de Medicis, and her tyrannical son, Charles IX.

On Bartholomew's day also, in the year 1662, the act of uniformity, which obtained the royal assent on the 19th of May, took place, in consequence of which about 2000 ministers relinquished their preferments in the church of England. The liturgy, with its alterations, came out of the press on Bartholomew eve, and the following day was the ultimate time fixed by the act for the subscription; so that all those throughout the kingdom who conformed, except a few in London, subscribed in ignorance of its contents.

'Bartholomew's day,' says Mr. Locke, 'was fatal to our church and religion, by throwing out a very great number (about two thousand) of worthy, learned, pious, orthodox divines, who could not come up to this oath, and other things in that act. And so great was the zeal in carrying on this church affair, and so blind the obedience required, that if you compute the time of passing this act with that allowed for the clergy to subscribe the book of common prayer thereby established, you will find it could not be printed and distributed so as that one man in forty could have seen and read the book they did so perfectly assent and consent to.'—'The matter was driven on,' says bishop Burnet (Hist. of his Times, vol. i. p. 212, 8vo.) 'with so much precipitation, that it seemed expected the clergy should subscribe implicitly to a book they had never seen. This was done by too many, as the bishops themselves informed me.' Among these were several, who, according to Mr. Locke's description of them, were 'taught rather to obey than to understand.'

Bartholomew's Gospel (St.), is mentioned in the preface to Origen's Homilies on St. Luke, and in the preface to St. Jerome's commentary on St. Matthew; but generally regarded as spurious; and placed by pope Gelasius among the apocryphal books.

Bartholomew's Hospital (St.), an institution for the reception of sick and wounded poor persons, situated on the south-east side of Smithfield, and incorporated by the name of the hospital of the mayor, commonalty, and citizens, of London, governors for the poor, called Little St. Bartholomew's, near West Smithfield. The building formerly belonged to the priory of St. Bartholomew, in Smithfield, founded by one Rahere, about 1102. At the dissolution of the monasteries, Henry VIII. left 500 marks a year to it, on condition that the city should add 500 marks per annum for the relief of the sick and poor people; but it was more largely endowed for the benefit of sick and lame persons only, by Edward VI. and the munificence of the city and private benefactors. This hospital having escaped the dreadful fire in 1666, was repaired and beautified by the governors in 1691. But the buildings became at length so ruinous, that a subscription was entered into in 1729, for defraying the expense of rebuilding it, on a plan comprehending four detached piles of building, to be joined by stone gate-ways, about a court or area. The four piles were erected and finished; one of these piles contains a large hall for the governors & general courts, a counting-house for the committees, and other necessary offices; the other three piles contain wards for the reception of the patients, &c. It is governed by a president, treasurer, &c. It is attended by three physicians, and three surgeons, besides as many assistant surgeons. It has an apothecary, a chaplain, cook, steward, renter, matron, and porter. Since its enlargement, it is capable of accommodating [illegible] patients; it extends relief also to a great number of out-patients.

BARTHOLOMITES, a religious order, founded at Genoa in 1307; the monks leading very irregular lives, the order was suppressed by pope Innocent X. in 1650, and their effects confiscated. In the church of the monastery of this order at Genoa, is preserved the image which it is pretended Christ sent to king Abgarus.

BARTLEMAN (J.), a very celebrated bass-singer, was educated under Dr. Cooke, and brought up in the choirs of the Chapel Royal and Westminster abbey. His first appearance as a professional singer was at the concerts at Freemasons' Hall, where the compass and sweetness of his fine baritone voice raised him at once to the top of his profession. He was immediately engaged in the ancient concerts, and became eventually one of the proprietors and conductors at the Hanover-square rooms. He died in [illegible], and was buried in the cloisters of Westminster Abbey, most of his professional associates of eminence attending the funeral. There is a handsome tablet erected there to his memory.

BARTOLOCCI (Julius), a learned monk, and professor of Hebrew at Rome, was born at Celeno, in 1613; and distinguished himself by writing an excellent Latin catalogue of the Hebrew writers, in 4 vols. folio; a continuation of which was drawn up by Imbonati his disciple. He died in 1687.

BARTOLOMEO (Francisco), whose real name was Baccio, a celebrated painter, born at Savignano, near Florence, in 1469. He was the disciple of Cosimo Rosselli, but owed to the works of Leonardo da Vinci his extraordinary skill in painting. Raphael, after quitting the school of Perugino, studied perspective under him, with the art of managing and uniting colours. In 1500 he turned Dominican friar; and some time after was sent by his superiors to the convent of St. Martin, in Florence. He painted both portraits and histories; but his scrupulous conscience would hardly ever suffer him to draw naked figures, though nobody understood them better. He died in 1517, aged 48.

BARTOLOZZI (Francis), an eminent engraver, was born at Florence in 1728. His father was a silversmith, and he was intended for a same business, but displayed so much taste and execution at the first handling of the graver, that he was placed at the Florentian academy, under Gaetano Biagio and Ignazio Hugford. Here Giovanni Cipriani was his fellow-pupil. He was subsequently articled to Joseph Wagner, of Venice, who employed him too much in copying from inferior masters. When this engagement was expired, he married a respectable Venetian lady, and accepted the invitation of cardinal Bottari to repair to Rome. Here he engraved his fine plates from the life of St. Nilus, and the heads of painters for a new edition of Vasari. He returned to Venice, where Mr. Dalton, librarian to George III. employed him to engrave some of the drawings of Guercino, and, pleased with the execution of them, offered him £300 per annum to accompany him to England, and work on his account. Under this engagement he completed his beautiful collection of Guercinos. Afterwards he worked on his own account, and for Mr. Alderman Boydell. He was highly distinguished for the elegance of his designs for the benefit tickets of the higher performers of the Opera-house; and hearing that the celebrated Strange said he could execute nothing else, in a fit of emulation he produced his Clytie, and Virgin and Child, from Carracci and Carlo Dolci. About this time the red dotted or chalk manner became prevalent; and Bartolozzi contrived to execute it so beautifully as to assist in seducing the public taste from the superior and legitimate style of the line. He was elected a member of the Royal Academy, on its institution. In 1802 he accepted an invitation from the Prince Regent of Portugal, to superintend a school of engravers at Lisbon, with a pension of £100 per annum, a, handsome house, and the produce of the engravings. It is said a pension of £400 was offered to him to remain in England; but that he would accept it only on condition that government would explain the matter to the prince Regent of Portugal. It is quite clear that all his past labors had left him in real need of one appointment or other. This interference being deemed improper, he bade England farewell, in his seventy-fifth year, and was received at Lisbon with great distinction. He died in that capital in his eighty-eighth year. Few artists have reached so distinguished a rank in every species of engraving, as Bartolozzi. His etchings in imitation of the drawings of the great masters, admirably represent the character and spirit of the originals; and his Marlborough gems, musical tickets, and prints for Boydell's Shakspeare, exhibit exquisite proofs of taste. He was so generous as to finish a plate left incomplete by Ryland, at the request of that unhappy man, while under sentence of death for forgery, and exhibited many other traits of a humane and benevolent united with a thoughtless character. Amoug the pupils of Bartolozzi were Sherwin, Tomkins, Cheeseman, and the two Vandramini.

BARTON-ON-HUMBER, a market-town and parish in the hundred of Yarborough, and county of Lincoln, 167 miles north from London; containing 2500 inhabitants. It is seated on the south side of the Humber, over which there is a ferry into Yorkshire, nearly six miles and a half across. There is a great trade in corn and flour, as well as bricks and tiles, carried on, and a manufactory of Paris whiting. The town consists of several streets irregularly built, and has two parish churches, the livings of the two parishes being united. Market on Monday.

BARTON (Eliz.), commonly called The Maid of Kent, was a religious impostor in the reign of Henry VIII. She was originally a servant at Aldington, in Kent, who had long been troubled with convulsions, which distorted her limbs and countenance, and threw her body into the most violent agitations. After she recovered, she is said to have counterfeited the same appearances. Masters, the minister of Aldington, with other ecclesiastics, thinking her a proper instrument for their purpose, persuaded her to pretend that what she said and did was by a supernatural impulse, and taught her to act her part in the most perfect manner. Thus she would lie as it were in a trance, then, coming to herself, would break out into pious ejaculations, hymns, and prayer; sometimes delivering set speeches, sometimes uncouth monkish rhymes. She pretended to be honored with visions and revelations, to hear heavenly voices, and the most ravishing melody. Amongst other wickedness of the times, she declaimed against heresy and innovations; exhorting the people to frequent the church, to hear masses, to use frequent confession, and to pray to our lady, and the saints. This artful management, together with her great exterior piety, and austerity of life, not only deceived the vulgar, but the celebrated Sir Thomas More, bishop Fisher, archbishop Warkam, &c.: the last of whom appointed commissioners to examine her. She now declared, that the blessed Virgin had appeared to her, and assured her that she should never recover, till she went to visit her image, in a chapel of the parish of Aldington. Thither she accordingly repaired, processionally, and in pilgrimage, attended by above 3000 people, and many persons of quality of both sexes. She fell into one of her trances, and uttered many things in honor of the saints, and the popish religion: for herself, she said that by the inspiration of God, she was called to be a nun, and that Dr. Bocking was her ghostly father. Bocking was a canon of Christ's church, Canterbury, and most probably associate in carrying on the imposture. Meanwhile, the archbishop ordered her to be admitted into the nunnery of St. Sepulchre, Canterbury; where she had frequent inspirations and visions, and pretended to work miracles for all such as would make a profitable vow to our lady. The priests, her managers, having so far succeeded, now announced the great object of her mission, i. e. to proclaim, that 'in case the king should divorce queen Catherine of Arragon, and take another wife during her life, his royalty would not be of a month's duration, but he should die the death of a villain.' Bishop Fisher, and others in the interest of the queen, and of the Romish religion, hearing of this, held frequent meetings with the nun, the fathers and nuns of Sion, the Charter-house, Sheen, &c. Encouraged by the lenity of the government, the ecclesiastics in this conspiracy resolved to publish the revelations of the nun, in their sermons, throughout the kingdom: they had communicated them to the pope's ambassadors, to whom also they introduced the maid of Kent; and they exhorted queen Catherine to persist in her resolutions. At length this confederacy began to be a very serious affair, and Henry ordered the maid and her accomplices to be examined in the star-chamber. Here they confessed all the particulars of the imposture, and afterwards appeared upon a scaffold erected at St. Paul's Cross, where the articles of their confession were publicly read in their hearing. Thence they were conveyed to the Tower, until the meeting of parliament; who, having considered the affair, pronounced it a conspiracy against the king's life and crown. The nun, with her confederates, Masters, Bocking, Deering, Able, &c. were attainted of high treason, and executed at Tyburn, April 20, 1534; where she confessed the imposture, laying the blame on her accomplices the priests, and craving pardon of God and the king.

BARTRAMIA, in botany, pellitory: a genus of the decandria monogynia class of plants; the calyx of which is a perianthium, cut into five parts; the corolla consists of five wedge-shaped petals; the fruit is globular, and the seeds are four in number, convex on one side, and angular on the other. It was so named in honor of a friend of Linnæus, J. Bartram. Eight species are described in English Botany.

BARTSIA, in botany, a genus of plants, named after Linnæus' unfortunate friend, John Bartsch, MD. Class didynamia; order angiospermia. Its generic characters are, CAL. perianth one-leaved: COR. monopetalous: STAM. filaments four: ANTH. oblong: PIST. germ ovate; style filiform; stigma obtuse: PER. capsule ovate: SEEDS numerous. The species are mostly perennials, as—B. coccinea, pedicularis, seu crista galli, &c. seu horminum, &c. Red bartsia, native of Virginia. B. pallida foliis alternis, &c. seu foliis lanceolatis, &c. Pale-flowered bartsia, native of Siberia. B. alpina foliis oppositis, &c. Staehelinia foliis, &c. Staehelinia alpina, euphrasia caule, &c. Euphrasia rubra, &c. Chamædry vulgare, &c. Clinopodium alpinum, &c. Teucrium alpinum, cratæogonon, seu pedicularis. Alpine bartsia, native of Britain; but the B. viscosa, euphrasia latifolia, seu alectorophos, &c. Viscid bartsia, or yellow marsh eye-bright, native of Britain, is an annual. B. viscosa, marshy, or yellow marsh eye-bright, was found by Mr. Lightfoot in bogs and marshy places about Loch-Goyl, near Loch-Long, in the district of Cowal in Argyllshire. The plant is about ten or twelve inches high, with an erect stalk, downy and unbranched: the leaves are sessile, spear-shaped, and a little viscous; the flowers are yellow, and the plant dyes black. It is likewise found in marshy places in Cornwall in England.

BARUCH, the son of Neriah, the disciple and amanuensis of the prophet Jeremiah. Josephus tells us he was descended of a noble family: it is said in his prophecy that he wrote it at Babylon, but at what time is uncertain.

BARUCH'S PROPHECY, one of the apocryphal books subjoined to the canon of the Old Testament. It has been reckoned part of Jeremiah's prophecy, and is often cited by the ancient fathers as such. It is difficult to determine in what language it was originally written. There are three copies of it extant; one in Greek, the other two in Syriac.

BARULES, in church history, heretics who held that the Son of God had only a phantom of a body, that souls were created before the world, and that they lived all at one time.

BARUTH, an ancient town of Turkey, in Syria, with a Christian church of the Nestorian persuasion. It is situated in a fine fertile soil, but is inconsiderable now to what it was formerly.

BARUTH, an Indian measure, containing seventeen gantans: it ought to weigh about three pounds and a half English avoirdupois.

BARWICK (John), an English divine of the seventeenth century, was born at Wetherslack in Westmoreland, in 1612. He studied at Cambridge, where he took his degrees of B.A. and M.A, in 1635 and 1638. When the civil war broke out he conveyed the university's plate, by their order, through bye roads to supply the king, who was then in great necessity. Through this, and other acts of loyalty, having rendered himself obnoxious to the parliament, particularly by keeping up a secret correspondence with the royal party, both before and after the king's death, he was at last committed to the tower, where he suffered great hardships for fifteen months, but was at last discharged, 1652, and, to the surprise of many, in better health than when he was incarcerated. Upon the restoration he was made dean of St. Paul's in 1661; in which station he repeatedly hurt his health, by his exertion in putting in order the archives of that church. He died of a pleurisy in 1664. His chief work was a Treatise Against the Covenant, which he published before the king's death.

BARWICK (Peter), physician to king Charles II. brother of the dean, was born in 1619, and studied also at Cambridge, where he took the degree of M. D. in 1655. Having settled in London, he soon rose to fame in his profession, by writing a defence of Dr. Harvey's discovery of the circulation of the blood. He was equally active and useful during the plague, and was no less successful in curing the small pox. He not only gave advice and medicines gratis to the poor, but also supplied their other necessities. He was particularly kind to the sufferers for royalty. He wrote the life of his brother in Latin, in 1671, which he deposited in the college library at Cambridge, and in 1693, when in his seventy-fourth year, added an appendix in defence of the Εικον Βασιλικη of king Charles I. He died in 1705, aged eighty-six.

BARYPYCNI; βαρυπυκνοι; in the ancient music, such chords as formed the gravest notes of the several spissa. There were five barypycni in the scale. See PYCNI.

BARYTES, in chemistry, a genus of earths, which by Bergman, Lavoisier, and other eminent chemists, has been considered as a refractory metallic oxyd. This supposition has been confirmed by the experiments of Berzelius and Pontin, who, led by Sir H. Davy's decomposition of potash and soda by galvanism, subjected the earth to the same agent. Their experiments were cd with complete success, and have been verified by Sir H. Davy himself. To this c basis Davy gave the name of BARIUM, see.

re barytes,' says Dr.Ure, 'is best obtained iting, in a covered-crucible, the pure crys- d nitrate of barytes. It is procured in the f hydrate by adding caustic potash or soda lution of the muriate or nitrate. And ba- slightly colored with charcoal, may be ed by strongly igniting the carbonate and al mixed together in fine powder. Barytes ed from the ignited nitrate is of a whitish- olor; more caustic than strontites, or per- ven lime. It renders the syrup of violets and the infusion of turmeric red. Its c gravity by Fourcroy is 4. When water ll quantity is poured on the dry earth it like quicklime, but perhaps with evolution e heat. When swallowed it acts as a vio- ison. It is destitute of smell. When pure s is exposed in a porcelain tube, at a heat g on ignition, to a stream of dry oxygen absorb the gas rapidly, and passes to the f deutoxide of barium. But when it is ed, in contact with atmospheric air, we ob- first this deutoxide and carbonate of ba- the former of which passes very slowly e latter, by absorption of carbonic acid from mosphere.'

in—'water at 50°, Fahrenheit, dissolves ventieth of its weight of barytes, and at about one-half of its weight; though M. rd, in a table, has stated it at only one- As the solution cools, hexagonal prisms, nated at each extremity with a four-sided id, form. These crystals are often attached another, so as to imitate the leaves of fern. imes they are deposited in cubes. They n about 53 per cent. of water, or 20 prime rtions. The supernatant liquid is barytes It is colorless, acrid, and caustic. It powerfully on the vegetable purples and rs. Exposed to the air it attracts carbonic and the dissolved barytes is converted into nate, which falls down in insoluble crusts. ears from the experiments of M. Berthollet eat alone cannot deprive the crystallised te of its water. After exposure to a red when it fuses like potash, a proportion of remains in combination. This quantity is ne equivalent = 1·125, to 9·75 of barytes. gnited hydrate is a solid of a whitish-gray caustic, and very dense. It fuses at t a little under a cherry red; is fixed in re; attracts, but slowly, carbonic acid the atmosphere. It yields carburetted gen, and carbonate of barytes when d along with charcoal, provided this be n excess.'

lphur combines with barytes, when they mixed together, and heated in a crucible. same compound is more economically ob- d by igniting a mixture of sulphate of es and charcoal in fine powder. This sul- t is of a reddish-yellow color, and when ithout smell. When this substance is put ot water a powerful action is manifested. The water is decomposed, and two new products are formed; namely, hydrosulphuret, and hydroguretted sulphuret of barytes. The first crystallises as the liquid cools; the second remains dissolved. The hydrosulphuret is a compound of 9·75 of barytes with 2·125 sulphuretted hydrogen. Its crystals should be quickly separated by filtration, and dried by pressure between the folds of porous paper. They are white scales, have a silky lustre, are soluble in water, and yield a solution having a greenish tinge. Its taste is acrid, sulphurous, and, when mixed with the hydroguretted sulphuret, eminently corrosive. It rapidly attracts oxygen from the atmosphere, and is converted into the sulphate of barytes. The hydroguretted sulphuret is a compound of 9·75 barytes wtth 4·125 bisulphuretted hydrogen; but contaminated with sulphite and hyposulphite in unknown proportions. The dry sulphuret consists probably of 2 sulphur + 9·75 barytes. The readiest way of obtaining barytes water is to boil the solution of the sulphuret with deutoxide of copper, which seizes the sulphur while the hydrogen flies off, and the barytes remains dissolved. Phosphuret of barytes may be easily formed by exposing the constituents together to heat in a glass tube. Their reciprocal action is so intense as to cause ignition. Like phosphuret of lime, it decomposes water, and causes the disengagement of phosphuretted hydrogen gas, which spontaneously inflames with contact of air. When sulphur is made to act on the deutoxide of barytes, sulphuric acid is formed, which unites to a portion of the earth into a sulphate.' Its salts are all, more or less, white and transparent: the soluble sulphates make, with the soluble salts of barytes, a precipitate insoluble in nitric acid; and they are all poisonous except the sulphate. See the respective ACIDS, for the most useful.

BARYTONO, in the Italian music, answers to our common pitch of bass.

BARYTONUM; from βαρυς, grave, and τονος, accent; in the Greek grammar, denotes a verb, which having no accent marked on the last syllable, a grave accent is to be understood.

BARZILLAI; from ברזל, iron, Heb.: 1. A Gileadite of Rogelim, who supplied David and his few faithful friends with provisions, while they lay at Mahanaim, during the usurpation of Absalom (2 Sam. xvii. 27—29); 2. A Simeonite of Meholah, the father of Adriel, one of Saul's sons-in-law (1 Sam. xviii. 19); 3. A priest who married a daughter of the hospitable Barzillai, and whose descendants returned from Babylon. Neh. vii. 63.

BAS, an island of France, on the coast of the department of Finisterre, to which department it belongs; it is about a league in length, and is situated two leagues north of St. Pal de Leon.

BAS (James Philip Le), a modern French engraver, by whom we have some excellent prints. His great force seems to lie in landscapes and small figures, which he executed in a superior manner. His style of engraving is extremely neat; he proves the freedom of the etching, and harmonizes the whole with the graver and dry point. We have also a variety of petty vignettes by this artist. He flourished about the middle of the present century; but we have no account of the time of his birth or death.

BASAAL, in botany, an Indian tree which grows about Cochin.

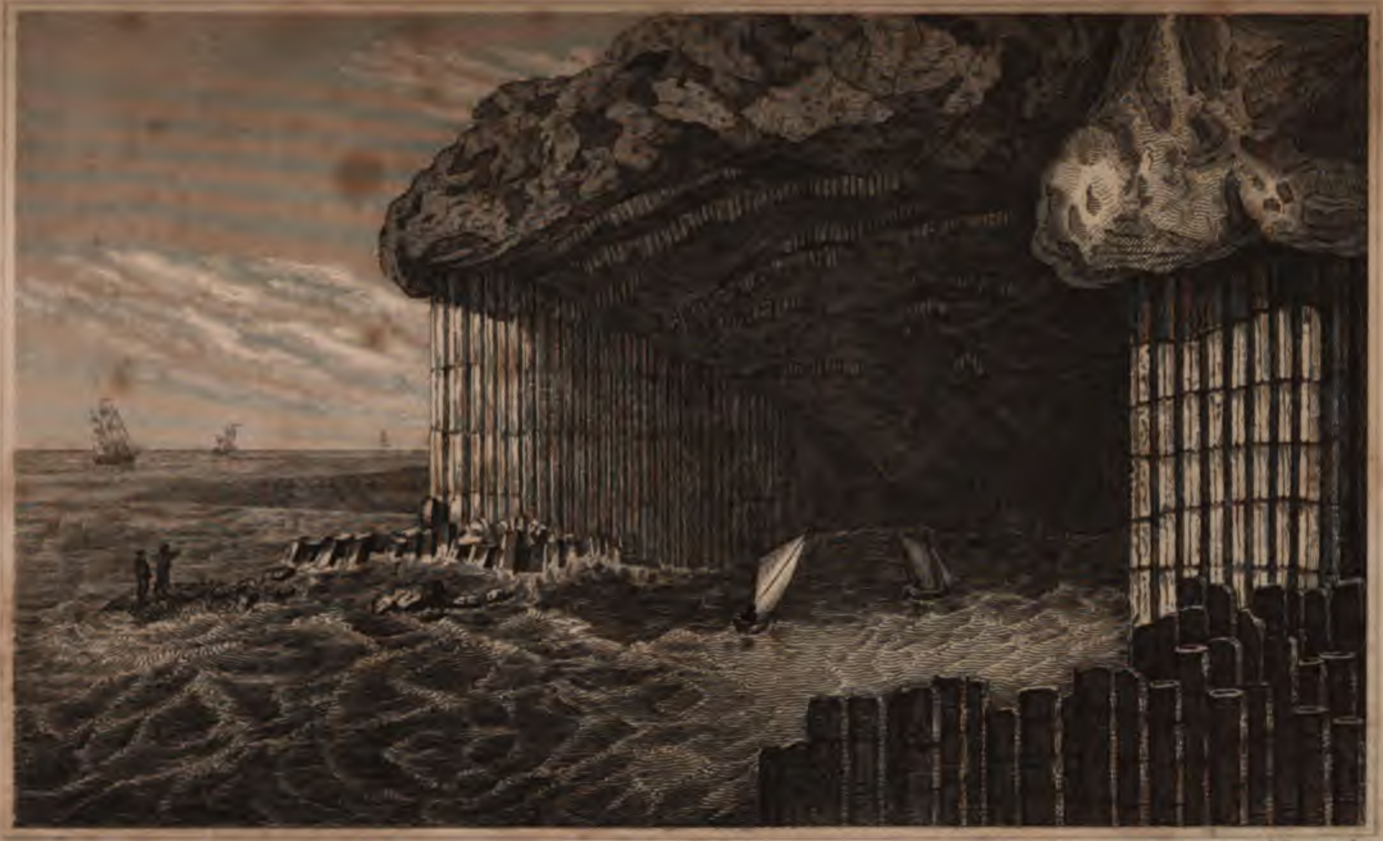
BASALITES, a word used by Salmasius for Basaltes.

BASALT, Artificial, or black porcelain, a composition, having nearly the same properties with the natural basaltes, invented by Messrs. Wedgwood and Bentley, and applied to various purposes in their manufacture.

Basalt, or Basaltes; from basal, iron, or *βασανιζω*, diligenter examino; in natural history, a heavy, hard stone, chiefly black or green, consisting of prismatic crystals, the number of whose sides is uncertain. The English miners call it cockle; the German schoerl. It abounds in gigantic masses in every part of Europe, and is now regarded by mineralogists as one of the most remarkable species of trap rocks. Basaltes was originally found in columns in Ethiopia, and fragments of it in the river Tmolus, and some other places. We now have it frequently both in columns and small pieces, in Spain, Russia, Poland, near Dresden, and in Silesia; but the most magnificent ranges of basaltic columns in the world are those called the Giant's Causeway, in Ireland: and next to them, perhaps, those of Staffa, one of the western isles of Scotland. Great quantities of basalt are likewise found in the neighbourhood of Mount Ætna in Sicily, of Hecla in Iceland, of the volcano in the island of Bourbon, and in the ci-devant province of Vivarais in the south of France. It is found therefore in the neighbourhood of active volcanoes, and one of the great questions that geologists have agitated is, whether it does not always demonstrate the existence of some extinguished volcano in its vicinity.

The rocks of the Cyclops, in the neighbourhood of Ætna, exhibit very magnificent basaltic pillars. One is an island composed of lava, on a base of basalt, of no uncommon nature; above which there is a crust of pozzolana, combined with a certain white calcareous matter, hard and compact; and which, as it is composed by the action of the air, appears like a piece of knotty porous wood. That rock, at some former period, became so hard as to split; and the clefts were then filled up with a very hard and porous matter like scoriæ. This matter afterwards acquiring new hardness, also splits, leaving large interstices, which in their turn have been filled up with a species of compound yellow matter. The island was formerly inhabited; and there remains a flight of steps leading from the shore to the ruins of some houses, which appear to have been hewn in the rock. These basaltic columns, at first view, seem to resemble those of the Giant's Causeway, and others commonly met with: But on a nearer inspection, we find this difference, that the former are assembled in groups of five or six about one, which serves as their common centre, and are of various sizes and forms; some square, others hexagonal, heptagonal, or octagonal. It seems also peculiar to that neighbourhood, that some portions of the basaltic formation present the likeness of cannon or hollow cylinders, varying in their diameters from six inches to twenty feet; but these descriptions not being so well authenticated as some which we possess of basaltes nearer home, we may proceed to remark, that in Ireland the basalt forming the Giant's Causeway rises far up the country, runs into the sea, crosses at the bottom, and rises again on the opposite land. The immense pillars of it have been very particularly described and examined in a work entitled Letters concerning the northern coast of the county of Antrim; from which the following brief particulars are extracted:— '1. The pillars of the Causeway are small, not very much exceeding one foot in breadth, and thirty in length; sharply defined, neat in their articulation, with concave or convex terminations to each point. (Basaltes, fig. 5.) In many of the capes and hills they are of a larger size, more imperfect and irregular in their figure and articulation, having often flat terminations to their points. At Fairhead they are of a gigantic magnitude, sometimes exceeding five feet in breadth, and 100 in length; often apparently destitute of joints altogether. Through many parts of the country this species of stone is entirely rude and unformed, separating in loose blocks; in which state it resembles the stone known in Sweden by the name of trappe. 2. The pillars of the Giant's Causeway stood on the level of the beach, whence they may be traced through all degrees of elevation to the summit of the highest grounds in the neighbourhood. 3. At the Causeway, and in most other places, they stand perpendicular to the horizon. In some of the capes, and particularly near Ushet harbour, in the isle of Baghery, they lie in an oblique position. At Doon Point, in the same island, and along the Balintoy shore, they form a variety of regular curves. 4. The stone is black, close, and uniform; the varieties of color are blue, reddish, and gray; and of all kinds of grain, from extreme fineness to the coarse granulated appearance of a stone which resembles imperfect granite, abounding in crystals of schorl, chiefly black, though sometimes of various colors. 5. Though the stone of the Giant's Causeway be in general compact and homogeneous, yet it is remarkable that the upper joint of each pillar, where it can be ascertained with any certainty, is always rudely formed and cellular. The gross pillars also, in the capes and mountains, frequently abound in these air-holes through all their parts, which sometimes contain fine clay, and other apparently foreign bodies: and the irregular basaltes beginning where the pillars cease, or lying over them, is in general extremely honeycombed; containing in its cells crystals of zeolite, little morsels of fine brown clay, sometimes very pure steatite, and in a few instances, bits of agate.'

In Staffa, one of the western isles of Scotland, the whole end of the island is supported by ranges of pillars, mostly about fifty feet high, standing in natural colonnades, according as the bays and points of land have formed themselves, upon a firm basis of solid unformed rock. Above these, the stratum, which reaches to the [illegible] surface of the island, varies in thickness, as island itself is formed into hills or valleys, [illegible] hill, which hangs over the valleys below, [illegible]



J.Shury sculp.

London Published by Thomas Tegg, 73, Cheapside

; an ample pediment. Some of these, above
.ty feet in thickness from the base to the point,
formed by the sloping of the hill ou each side,
nost into the shape of those used in architec-
e. Sir Joseph Banks observed that the bend-
; pillars of Staffa differ considerably from those
the Giant's Causeway. In Staffa they lie
wn on their sides, each forming the segment
a circle; and in one place a small mass of
m very much resembles the ribs of a ship.
ose of the Giant's Causeway, which he saw,
along the face of a high cliff, bent strangely
he middle, as if unable at their first form-
on, while in a soft state, to support the mass
ncumbent earth.

Sir William Hamilton informs us, that in 1779
picked up some fragments of large and regu-
crystals of close-grained lava or basalt, in the
ghbourhood of Vesuvius, the diameter of
ich, when the prisms were complete, might have
n eight or nine inches. He observes, that
suvius does not exhibit any lavas regularly
stallised, and forming what are ealled Giants'
useways, except a lava that ran into the sea,
r Torre del Greco, in 1631, which has a small
gree of such an appearance. As the fragments
basaltes which he found on this mountain,
wever, had been evidently thrown out of the
ter in their proper form, he puts the question,
lay not lavas be more ready to crystallise
thin the bowels of a volcano than after their
ission? And may not many of the Giants'
useways already discovered be the nuclei of
lcanic mountains, whose lighter and less solid
rts may have been worn away by the hand of
ne? Mr. Faujas de St. Fond gives an exam-
e of basalt columns placed deep within the
ater of an unextinguished volcano.'

We suppose this writer to allude to the moun-
in of Aisa, called La Coupe, or the Col d'Aisa,
tuated near the village Entrague, in the Viva-
is. This village, according to St. Fond, is
aced on a kind of platform of volcanic matter
ove the torrent of the Volant, which has here
cavated a bed of great depth and width, bor-
red on the right and left by grand ranges of
saltic columns. In the midst of a prodigious
mpart of these columns, at different levels, may
seen a current of lava descending from a
ighbouring mountain, and joining the columns
at border the river. Here we see, in the most
equivocal and convincing manner, that the
a, under the form of hard and compact basalt,
s flowed at several times from the mountain,
d has formed the great causeways at different
ghts, to which the lava is still united and ad-
ing. We may follow the current of basalt up
declivity of the mountain, which has a conical
m and a great elevation, and is entirely vol-
nic from the base to the summit. According
St. Fond, it is the most remarkable and best
racterised crater in all the Vivarais.

All the base of the conical mountain La Coupe
covered by porous and cellular lava in detached
egular masses, heaped on each other, so as to
ve no doubt that they have been ejected in a
quid state by one or more formidable eruptions,
d have taken their forms as they fell at the foot
the cone. On reaching the summit or edge of the crater, we may see the whole mountain, which forms a regular cone resembling that of Vesuvius. The edges of the crater are steep, and formed in the shape of a tunnel; the greatest diameter being from 140 to 150 toises, and the depth about 600 feet. The lavas are colored, and converted into a kind of puzzolani, and mixed with great masses of black and sharp scoriæ, which makes the descent difficult. At the bottom of this inverted cone is a magnificent plantation of chestnut-trees, which have flourished astonishingly in this ancient mouth of a volcano, having no other soil than the dry and friable puzzolani. It may be noticed, that the crater of Vesuvius was lined with lofty trees at the period of its eruption in 1631. At the bottom of the crater, in La Coupe, we may observe a breach or opening on the side facing the houses of the Col d'Aisa; there is a general inclination to this opening, which has served to give a passage to the lava. When we are arrived at the opening we may observe a stream of lava coming from the interior, and taking its course down the mountain, it descends in a waving direction amidst the porous lavas. This current is a true black basalt, compact and similar to that of the columns; in certain parts its surface appears blistered, and in other places it becomes porous. Following the current of lava, after it has crossed the path, which is at the foot of the mountain, we may trace its course to the bed of a torrent not far from the high road. There may be seen, says St. Fond, a spectacle most gratifying to the geologist; for the lava whilst still on the descent, and before it had reached the level ground, has effected a prismatic form; and the lava at the bottom has formed a beautiful colonnade.

There is a similar conical mountain in the Vivarais, with a distinct and much larger crater, called La Coupe de Jaujeac. The river Vignon flows at the foot of it. On its banks are immense ranges of basaltic columns, the most elevated of any in the Vivarais. They enclose the borders of the river on each side for more than a league. Some of the prisms rise in one shaft to the height of fifty feet; in other parts, the articulated columns form a kind of regular causeway. In some places the columns are bent, and above we see immense ramparts of basalt, of more than 140 feet in height, in several ranges, spreading out like a fan, and diverging in every direction. On the left, the current of basalt covers several little hills of granite, and is moulded upon them. In some parts the compact lava forms one solid mass; in other places it is arranged in great beds. Nothing can be more grand and varied, says St. Fond, than the course of the river Vignon to the Ardeche, where the great current of lava joins the streams that have flowed from the volcanoes of Thueyts and Neyrac.—*Faujas St. Fond sur les Volcans eteints du Vivarais et du Velay.*

Having noticed the principal localities of basalt, we may now observe that the structure or form in which it appears, presents one of its most striking peculiarities. This would seem to be essentially the same in the various and immense stores of it yet discovered; so that the accurate description of one basaltic deposit might serve, as far as any purposes of science are concerned, for that of any other. Mr. Hamilton, for instance, the author of the Letters on Antrim, describes the Giant's Causeway in language which might at once be applied to the picturesque pillars of Staffa; telling us that the pillars of the former, varying in their length and thickness from 30 feet to 100, and from one foot to five respectively, rise from the level of the beach, and ascend gradually into the greatest elevations of the neighbouring hills. These colonnades, we are also informed, are generally perpendicular to the horizon, and particularly at the causeway itself; but it is added that, in the vicinity, they are not unfrequently observed lying in an oblique position, and assuming a great variety of regular curves. The same facts are recorded in reference to the famed rocks of the Cyclops. The columns there, as at Staffa and Antrim, are of various sizes and forms, as we have indeed already noticed; some being four-sided, others hexagonal, heptagonal, octagonal, and even nine-sided; which last is the rarest form which basalt ever assumes. The position, too, is equally various; some standing erect, whilst others are laid on their sides, piled above one another like sacks of corn in a granary. The jointed columns too are of ever-varying lengths and joints; some a few inches, others many feet long, found occasionally bent, but generally nicely fitted up, as by the hands of a most skilful mechanic.

Kirwan is also of opinion, that the basaltes owe their origin both to fire and water; they seem to have been at first a lava, he observes; but this, while immersed in it water, was so diffused or dissolved in it with the assistance of heat, as to crystallise when cold, or coalesce into regular forms. That basaltes is not the effect of mere fusion, he concludes from comparing its form with its texture. Its form, if produced by fusion, ought to be the effect of having flowed very thin; but in that case its texture should be glassy: whereas it is merely earthy, and devoid of cavities. Hence, we may understand how it comes to pass that lava perfectly vitrified, and even water, have been found enclosed in masses of basaltes.

It is known, in confirmation of this reasoning, that when lava runs into the sea, it does in most cases actually assume the basaltic structure more or less perfectly: and, it is worthy of particular observation, that all the columnar trap which has attracted any attention on account of its regularity or beauty, is either altogether insular or situated near the ocean.

As to its formation and analysis:—'Ten years ago,' says Mr. Bergman,' it was a general opinion, that the surface of the earth, together with the mountains, had been produced by moisture. It is true that some declared fire to be the original cause, but the greater number paid little attention to this opinion. Now, on the contrary, the opinion that subterraneous fire had been the principal agent gains ground daily; and every thing is supposed to have been melted, even to the granite. My own opinion is, that both the fire and water have contributed their share in this operation; though in such proportion that the force of the former extends much farther than the latter; and, on the contrary, that the fire has only worked in some parts of the surface of the earth. It cannot be doubted that there has been some connexion betwixt the basaltic pillars and subterraneous fire; as they are found in places where the marks of fire are yet visible; and as they are even found mixed with lava, tophus, and other substances produced by fire. As far as we know, nature makes use of three methods to produce regular forms in the mineral kingdom. 1. That of crystallisation or precipitation. 2. The crusting or settling of the external surface of a liquid mass while it is cooling: and 3. The bursting of a moist substance while it is drying. 1. The first method is the most common; but to all appearance, nature has not made use of it in the present case. Crystals are seldom or never found in any quantity running in the same direction; but either inclining from one another, or, what is still more common, placed towards one another in sloping directions. They are also generally separated a little from one another when they are regular. The nature of the thing requires this, because the several particles of which the crystals are composed must have the liberty of obeying that power which affects their constitution. The basaltic columns on the contrary, whose height is frequently from thirty to forty feet, are placed parallel to one another in considerable numbers, and so close together that the point of a knife can hardly be introduced between them. Besides, in most places, each pillar is divided into several parts or joints, which seem to be placed on one another. And indeed it is not uncommon for crystals to be formed one above another in different layers, while the solvent has been visibly diminished at different times: but then the upper crystals never sit so exactly upon one another as to produce connected prisms of the same length or depth in all the strata taken together; but each stratum, separately taken, produces its own crystals. Precipitation, both in the wet and dry way, requires that the particles should be free enough to arrange themselves in a certain order; and as this is not practicable in a large melted mass, no crystallisations appear, excepting on its surface or in its cavities.

Bergman found that the component parts of various specimens of Basaltes were, at a medium 52 parts silex, 15 alumina, 8 carbonate of lime, and 25 iron.

Several modern mineralogists have analysed basalt, and other trap rocks, to discover their affinity with one another, and to the lava of volcanos, of which they are all conceived to be only varieties. Indeed the facts we have already given of the basaltic formations in France, seem to put the question at rest. The following results obtained by Dr. Kennedy, are extracted from the Edinburgh Philosophical Transactions.

The basalt from Staffa contains in 100 parts

Silex	48
Argil	16
Oxide of iron	16
Lime	9
Soda	4
Muriatic acid	1
Loss	6
	100

The lava of Catanea, Mount Ætna, contains 100 parts,

Silex	51
Argil	19
Oxide of iron	14·5
Lime	9·5
Soda	4
Muriatic acid	1
Loss	1
	100

The greenstone of Salisbury craig, contains in 0 parts,

Silex	46
Argil	19
Oxide of iron	17
Lime	8
Soda	3·5
Muriatic acid	1
Loss	5·5
	100

The lava of Santa Venese, Mount Ætna, con- ns in 100 parts,

Silex	50·75
Argil	17·5
Oxide of iron	14·25
Lime	10
Soda	4
Muriatic acid	1
Loss	2·95
	100

The greenstone of Calton hill, at Edinburgh, tains in 100 parts,

Silex	50
Argil	18·50
Oxide of iron	16·75
Lime	3
Soda	4
Muriatic acid	1
Loss	6·75
	100

The amorphous basaltes, known by the name of wley Rag, the ferrilite of Kirwan, of the speci- gravity of 2·748, afforded Dr. Withering 47·5 silex, 32·5 of alumina, and 20 of iron, at a y low degree of oxidation. Klaproth gives, the analysis of the prismatic basaltes of Ha- berg, silex 44·5, alumina 16·75, oxide of iron , lime 9·5, magnesia 2·25, oxide of manganese 2, soda 2·60, water 2. On a subsequent lysis, with a view to detect the existence of riatic acid, he found slight indications of but it was in an extremely minute propor- n.

On the whole, the affinity between lava and p rock formations seems established, but for ther information we would refer the reader to interesting work of Dr. M'Culloch, on the stern isles; Dr. Boué's Essai Geologique sur cosse, Necker de Saussure; and the Geologi- Essays of Messrs. Buckland, Conybeare, and uting.

BASALTIC Horneblende, occurs usually opaque six-sided single crystals, which some- es act on the magnetic needle. It is imbedded in basalt or wacke. Color velvet-black. Lustre vitreous. Scratches glass. Sp. gr. 3·25. Fuses with difficulty into a black glass. It consists of 47 silica, 26 alumina, 8 lime, 2 magnesia, 15 iron, and 0·5 water. It is found in the basalt of Arthur's Seat, in that of Fifeshire, and in the isles of Mull, Canna, Eigg, and Sky. It is found also in the basaltic and floetz trap rocks of England, Ireland, Saxony, Bavaria, Hungary, France, and Spain.

BASAN. See Bashan.

BASANITE, in mineralogy, is a variety of silicious slate, commonly known under the name of touchstone, and has been used both in ancient and modern times, to determine the purity of gold and silver by the color of the streak which those metals leave when rubbed on it. The permanency or otherwise of the streak, under the application of nitric acid, is a further test of the purity of gold. Other stones have been occasionally applied to this purpose. See Assay.

BASANWOW, in the Celtic mythology, was the son of Diocles, the king of the Sicambrians. He disappeared suddenly, after having reigned thirty-six years, was supposed to have ascended to heaven, and was honored by the Germans as the god of armies.

BASARTSCHIK, a considerable town of European Turkey, in Romania. It is well built, and has clean and broad streets. It is situated on the river Maritz.

BASARUCO, in commerce, a small base coin in the East Indies, made of very bad tin. Of this coin there are two sorts; the base sort is one-sixth lower in value than the good. Three basarucos are equal to two rees of Portugal.

BAS-BRETON, the language of the natives of Bretagne, or Brittany.

BASCANIA, in antiquity, ridiculous or grotesque figures, hung up by the ancient smiths before their furnaces, as charms against envy.

BAS-CHEVALIER. See Bachelor.

BASE, *v. n.* & *adj.*
Ba'seless,
Ba'sely,
Ba'seness,
Baseborn,
Base-String.

Derived from Βασις, that upon which we tread, stand, or go, from Βαινω, Βαινειν, to go. Thus it means, with regard to locality, any thing low; the lower part of a pedestal, and the foundation on which it rests; any thing spurious or mixed. It is metaphorically applied to sounds; to dispositions of the mind; to actions; to general character. Thus it signifies whatever is lowered, degraded, disgraced, shameful, vile, mean, and worthless. It is, however, a stronger term of reproach than those employed to express its meaning: mean and vile, especially, convey a very inadequate sense of it. *Base* marks a high degree of moral turpitude; vile and mean denote, in different degrees, the want of all value or esteem; what is base excites our abhorrence; what is vile provokes disgust; what is mean awakens contempt. A base voice or sound, is a low deep voice or sound.

Mete the space from thy foote to the *base* of the toure.
Chaucer. Astrolabie.

And I will yet be more vile than this, and will be *base* in mine own sight. *2 Sam.*

Upon this *base* a curious work is rais'd,
Like undivided brick, entire and one;
Though soft, yet lasting, with just balance pois'd;
Distributed with due proportion.
P. Fletcher. Purple Island.

Instead of music, and *base* flattering tongues,
Which wait to first salute my lord's uprise;
The cheerful lark wakes him with early song,
And birds' sweet whistling notes unlock his eyes. *Id.*

By him Andicon pac'd of middle age,
His mind as far from rashness, as from fears;
Hating *base* thoughts, as much as desperate rage.
The world's loud thunderings he unshaken hears,
Nor will he death or life, or seek or fly;
Ready for both—He is as cowardly
Who longer fears to live, as he who fears to die. *Id.*

What if it tempt thee tow'rd the flood, my lord?
Or to the dreadful summit of the cliff,
That beetles o'er his *base* into the sea? *Shakspeare.*

If that rebellion
Came, like itself, in *base* and abject routs,
You, reverend father, and these noble lords,
Had not been here. *Id.*

It could not else be, I should prove so *base*
To sue and be denied such common grace. *Id.*

Why, bastard? wherefore *base?*
When my dimensions are as well compact
As honest madam's issue. *Id.*

The king is not himself, but *basely* led
By flatterers. *Id.*

Why brand they us
With *base?* with *baseness?* bastardy? *Id.*

I have sounded the very *base*-string of mortality.
Id. Henry IVth.

Men of weak abilities in great place, are like little statues set on great *bases*, made the less by their advancement. *Bacon.*

Insurrections of *base* people are commonly more furious in their beginnings. *Id.*

In pipes, the lower the note holes be, and the further from the mouth of the pipe, the more *base* sound they yield. *Id.*

The just and measured proportion of the air percussed towards the *baseness* or trebleness of tones, is one of the greatest secrets in the contemplation of sounds. *Id.*

This young lord lost his life with his father in the field, and with them a *base* son. *Camden's Rem.*

A lieutenant *basely* gave it up, as soon as Essex in his passage demanded it. *Clarendon.*

If fortune hath envyed me wealth, thieves have robbed me, my father have not left me such revenues as others have, that I am a younger brother *basely* born, of mean parentage, a dirt-dauber's son, am I therefore to be blamed? an eagle, a bull, a lion, is not rejected for his poverty, and why should a man? 'Tis fortune's fault; not mine. *Anat. Melancholy.*

Swinish gluttony
Ne'er looks to heaven amidst his gorgeous feast,
But with besotted *base* ingratitude
Crams and blasphemes his feeder. *Milton's Comus.*

Phalastus was all in white, having his *bases* and caparison embroided. *Sidney.*

Since the perfections are such in the party I love, as the feeling of them cannot come unto any unnoble heart; shall that heart, lifted up to such a height, be counted base. *Id.*

We hold, that seeing there is not any man of the Church of England but the same man is also a member of the commonwealth, nor any member of the commonwealth which is not also of the Church of England; therefore, as in a figure triangle, the *base* doth differ from the sides thereof, and yet one and the self-same line is both a *base* and also a side; a side simply; a *base* if it chance to be the bottom and underlie the rest: so, albeit, properties and actions of one do cause the name of a commonwealth, qualities and functions of another sort, the name of the church to be given to a multitude, yet one and the self-same multitude may in such sort be both.
Hooker. Eccles. Pol.

Which when the cruel Amazon perceiv'd
She 'gan to storme, and rage, and rend her gall
For very fell despight, which she conceiv'd
To be so scorned of a *base*-born thrall,
Whose life did lie in her least eye-lids' fall. *Spenser.*

Such is the power of that sweet passion,
That it all sordid *baseness* doth expel. *Id.*

The silver-sounding instruments did meet
With the *base* murmur of the water's fall;
The water's fall, with difference discreet,
Now soft, now loud, unto the wind did call;
The gentle warbling wind low answered to all. *Id.*

If the lords and chief men degenerate, what shall be hoped of the peasants and *baser* people.
Id. On Ireland.

Oh! she is the pride and glory of the world;
Without her all the rest is worthless dross;
Life a *base* slavery; empire but a mock;
And love, the soul of all, a bitter curse.
Rochester's Valentinian.

Nor shall it e'er be said that wight,
With gauntlet blue and *bases* white,
And round blunt truncheon by his side,
So great a man at arms defy'd. *Hudibras.*

He, whose mind
Is virtuous, is alone of noble kind;
Though poor in fortune, of celestial race;
And he commits the crime who calls him *base*.
Dryden.

At thy well-sharpen'd thumb, from shore to shore,
The trebles squeak for fear, the *bases* roar. *Id.*

Your soul's above the *baseness* of distrust,
Nothing but love could make you so unjust. *Id.*

We alleged the fraudulent obtaining his patent, the *baseness* of his metal, and the prodigious sum to be coined. *Swift.*

When a man's folly must be spread open before the angels, and all his *baseness* ript up before those pure spirits, this will be a double hell. *South.*

It is *base* in his adversaries thus to dwell upon the excesses of a passion. *Atterbury.*

At the first grin he cast every human feature out of his countenance; at the second he became the head of a *base*-viol. *Addison.*

A guinea is pure gold, if it has nothing but gold in it, without any alloy or *baser* metal. *Watts.*

But see thy *base*-born child, thy babe of shame,
Who, left by thee, upon our parish came. *Gay.*

Those wise old men, those plodding grave state pedants,
Forget the course of youth; their crooked Prudence,
To *baseness* verging still, forgets to take
Into their finespun schemes the generous heart,
That through the cobweb system bursting lays
Their labours waste.
Thomson's Tancred and Sigismunda.

When men of rank sacrifice all ideas of dignity to ambition without a distinct object, and work with low instruments for low ends, the whole composition becomes low and *base*. *Burke.*

Oh, ye seven hills! awaken,
Ere your very *base* be shaken. *Byron.*

Base. A game or play; to keep [illegible] about one spot of ground.

The first day of the challenge at *base*, or running, the king won. *Burnet's Hist. of Reform.*

, in architecture, is used for any body
ears another, but particularly for the
art of a column and pedestal. The
, in the early times of architecture, used
s. The doric columns in the temple of
at Athens have none, but stand immedi-
pon the floor of the porch. Columns
ds came to be supported on square pieces
linths, and after that on pedestals. The
a column, of whatsoever order, on a pe-
s that part which comes between the top
edestal and the bottom of the shaft of the
; when there is no pedestal, it is the part
the bottom of the column and the plinth:
ve included the plinth as a part of the
it it is properly the piece on which the
nds, as the column stands upon that.
lestal also has its base as well as the co-
nd the pilaster. The base of columns is
tly formed in the different orders; but in
it is composed of certain spires or circles,
thence in early times called the spire of
n. These circles were in this case sup-
represent the folds of a snake as it lies
p; but they are properly the represen-
f several larger and smaller rings or circles
with which the trunks of trees, which
e ancient columns, were surrounded to
their bursting; these were rude and irre-
ut the sculptor who imitated them in stone
e way to make them elegant. The base
ent in the different orders: thus,

, Composite, has an astragal less than
nthian.

, Corinthian, has two toruses, two sco-
a fillet.

, Doric, has an astragal more than the
, though that was introduced by the mo-

, Ionic, has a lage torus over two slender
separated by two astragals: though in
t ancient monuments of this order there
bases at all; which the architects are at a
account for.

, Tuscan, is the most simple of all others;
ng of a single torus besides the plinth.

, in chemistry. See Basis.

, in fortification, the exterior side of the
, or that imaginary line which is drawn
e flanked angle of a bastion to the angle
e to it.

, in geometry, the lowest side of the
ter of a figure.

of a Conic Section, a right line in the
ola and parabola, arising from the com-
tersection of the secant plane and the base
cone.

of a Rectangled Triangle, the side
e the right angle, i. e. the hypothenuse.

of a Solid Figure, the lowest side, or
which it stands.

of a Triangle, any side thereof is occa-
so called; though properly it is the
side, or that which lies parallel to the
.

, in gunnery, the least sort of ordnance,
meter of whose bore is 1¼ inch, weight
unds, length 4 feet, load 5 pounds, shot
nd weight, and diameter ¼ inch.

Base Court, in law, sometimes signifies any court not of record.—Such, is the Court-baron.

Base Estates are such as base tenants have in their lands.

Base Fee, a tenure in fee at the will of the lord, as distinguished from soccage, or free tenure; but, according to Lord Coke, a base fee is what may be defeated by limitation, or on entry, &c.

Base Tenure (bassa tenura), holding by villenage, or other customary service; as distinguished from the higher tenures in capite, or by military service.

Base, in music, see Bass.

Base, in trigonometry. See Altern Base.

Base Knights, the inferior order of knights, as distinguished from barons and bannerets, who were the chief or superior knights.

BASELLA, climbing nightshade, from Malabar. A genius of the trigynia order, belonging to the pentandria class of plants; and in the natural method ranking under the twelfth order, holoraceæ. The calyx is wanting; the corolla is seven-cleft, with the two opposite divisions broader and at last berried, there is one seed. 1. B. alba, with oval, waved, flaccid leaves, and small flowers and fruit. These plants will climb to a considerable height, and send forth a great number of branches; so they should be trained up to a trellis, or fastened to the back of the stove; otherwise they will twist themselves about whatever plants stand near them, which will make a very disagreeable appearance. 2. B. rubra, with red leaves and simple footstalks, has thick, strong, succulent stalks, and leaves which are of a deep purple color.—This plant will climb to the height of ten or twelve feet, provided it is kept in a stove; but in the open air it will not grow so large in this country; nor will the seed come to perfection unless in very warm seasons. The flowers of this plant have no great beauty, but it is cultivated on account of the odd appearance of its stalks and leaves, and the flowers of a whitish green color tipped with purple.

BASELLI or Basels, in our old historians, a species of coin abolished by King Henry II. A. D. 1158.

BASEMENTS, in architecture. See Architecture, Index.

BASE Ring of a cannon, is the great ring next behind the touch-hole.

Base Rocket, in botany. See Reseda.

BAS-EN-BASSET, or Basset, a market town in the department of the Upper Loire, France, arrondissement of Issengeaux. It is the head of a canton and has 5000 inhabitants. Here are manufactures of blond lace, tobacco-pipes, and earthenware. It is three miles north-west of Monistrol, and twenty north-east of Le Puy.

BA'SENET, Fr. *bassinet*; Old Eng. *basnyt*; a little bowl, a small basin; a part of military equipage, a kind of helmet or head-piece, worn originally by the French men at arms.

> Notwithstanding at the last the king made him put on his *basenet*, and then took a surd with both his hands, and strongly with a good will strake him on the necke, and the same day hee made three other citizens knights for his sake in the same place.
>
> *Stow*, Ann. 1381. R. 2

Therefore he would her doe away all dread;
And that of him shee mote assur'd stand,
He sent to her his *basenet*, as a faithful band.
Spenser. Faerie Queene.

BASH, *v. n.*
BASH'FUL, *adj.*
BASH'FULLY, *adv.*
BASH'MENT, *n. s.*
BASH'FULNESS, *n. s.*

See To ABASH. This word, with all those of the same race, Dr. Johnson says, are of uncertain etymology. Skinner imagines them derived from base or mean; Minsheu from *verbaesen*, Dut., to strike with astonishment; Junius from *βασις*, which he finds in Hesychius to signify shame. The conjecture of Minsheu seems most probable. It is sometimes used as synonymous with modest and modesty; but not with a nice regard to accuracy. Modest signifies setting measure to ones estimate of oneself; but *bashful*, a lady to be abashed. Modesty is a habit or principle of the mind; *bashfulness* is a state of feeling. Modesty is at all times becoming; *bashfulness* is only becoming in females, or very young persons, in the presence of their superiors. Modesty discovers itself in the absence of evory thing assuming, whether in look, word, or action; *bashfulness* betrays itself by a downcast look, and a timid air. A modest deportment is always commendable; a bashful temper is not desirable.—*Crabb.*

Are you not ashamed, *bash* you not to broach and set abroad, in the view and face of the world, such mockeries of religion? *Holland's Livius*, fol. 320.

It might be either for the lacke of learnyng and good bryngyng up (a great and common fault in great princes of Germany), or els for his *bashful* nature in youth, which propertie Xenophon wittely faynged to be in Cyrus at lyke yeares, judging *bashfulness* in youth, to be a great token of virtue in age.
Ascham. Report and Discourse.

He looked with an almost *bashful* kind of modesty, as if he feared the eyes of man. *Sidney.*

They *bashe* not to defile the wives of other men.
Bale on the Revelations.

Ah! see the virgin rose, how sweetly shee
Doth first peep forth with *bashful* modestee.
That fairer seemes the lesse ye see her may!
Lo! see soone after, how more bold and free,
Her bared bosom she doth broad display!
Lo! see soone after, how she fades and falls away.
Spenser.

His countenance was bold, and *bashed* not
For Guyon's looks, but scornful eye glance at him shot.
Id.

I never tempted her with word too large;
But, as a brother to a sister, show'd
Bashful sincerity with comely love. *Shakspeare.*

Hence *bashful* cunning?
And prompt me plain and holy innocence. *Id.*

Another, through *bashfulness*, suspicion, and timorousness, will not be seen abroad, loves darkness as life, and cannot endure the light, or to sit in lightsome places; his hat still in his eyes, he will neither see, nor be seen by his good will. *Anat. Mel.*

Her golden hair, her silver forehead high,
Her teeth of solid, eyes of liquid pearl;
But neck and breast no man might bare descry,
So sweetly modest was this *bashful* girl.
Fletcher's Purple Island.

There are others, who have not altogether so much of this foolish *bashfulness*, and who ask every one's opinion. *Dryden.*

Our author anxious for his fame to-night,
And *bashful* in his first attempt to write,
Lies cautiously obscure. *Addison.*

Mere *bashfulness* without merit is awkwardness. *Id.*

Doubtless there are men of great parts that are guilty of downright *bashfulness*, that by a strange hesitation and reluctance to speak, murder the finest and most elegant thoughts, and render the most lively conceptions flat and heavy. *Tatler*, No. 232.

Our orators, with the most faulty *bashfulness*, seem impressed rather with an awe of their audience than with a just respect for the truths they are about to deliver; they, of all professions, seem the most *bashful* who have the greatest right to glory in their commission. *Goldsmith. Essay III.*

So bright the tear in Beauty's eye,
Love half regrets to kiss it dry,
So sweet the blush of *bashfulness*,
Even pity scarce can wish it less. *Byron.*

BASHAN, or BASAN, a kingdom beyond Jordan, mentioned in Scripture. By Josephus, Eusebius, and Jerome, it is called Batanæ. When the Israelites entered the land of Canaan, the whole country beyond Jordan, from that of the Moabites or Arabia, as far as mount Hermon and Lebanon, was divided into two kingdoms, viz. those of the Amorites, and the Bashanites: the former to the south, and the latter to the north. The kingdom of the Amorites extended from the river Arnon and the country of Moab, to the river Jabbok; which, running obliquely from the east, was at the same time the boundary of the Ammonites, as appears from Numb. xxi. 24. and Deut. ii. 37. and iii. 16. It fell to the lot of the Reubenites and Gadites, and Bashan, to the half tribe of Manasseh. To this was annexed a part of the hilly country of Gilead, and the district of Argob; yet so that Bashan continued to be the principal and greatest part: but after the Babylonish captivity Bashan was subdivided, so that only a part was called Batanea or Basan, another Trachonitis, a third Aurunitis or Iturea, and some part Gaulonitis; but to settle the limits of each of these parts is now impossible. Bashan was a country famous for its pastures, and breed of large cattle.

BASHAN, a mountain in the above kingdom, which seems to have retained its original name long after the Israelites were in possession of that country; at least is often mentioned with a reference to its original inhabitants, who were idolaters and enemies to Israel. In this respect bringing back from Bashan, signifies the deliverance from bondage, even death. Bashan is referred to in another view: the country is exceedingly fruitful, and is therefore used to represent a flourishing state.

BASHANITES, the people of Bashan.

BASHAR EBN MOTAMER, a principal man among the Motazalites, who varied in some points from the general tenets of the sect, extending man's free agency to a great length, even to the making him independent. He asserted, that God is not always obliged to do that which is best, for that, if he pleased, he could make all men true believers. Accordingly he taught that God might doom an infant to eternal punishment; but taught at the same time, that he would be unjust in so doing!

BASHARIANS, a sect of Mahommedans, a subdivision of the Motazalites, who maintain the tenets of Bashar Ebn Motamer. See last article.

BASHAW, PASCHA, or PACHA, a Turkish

rnor of a province, city, or other district. All Egypt is, on the part of the grand seignior, governed by a bashaw, who has in reality but little power; but seems principally to be meant for communicating to his divan of beys, and to the divans of the several military ogiacs, the orders of the grand seignior, and to see that they be executed by the proper officers. When a bashaw farms a country of the grand seignior, the fines that are paid, when any life drops upon the lands, belong to him. Originally all the lands of Egypt belonged to the grand seignior; and he still looks on them as his own: but his power being now lost, they all go to the next heir; who must, however, be invested by the bashaw, and he is therefore glad to compound for a small sum. The nature of the bashaw's office requires him to be ever attempting means to cut off such as are too aspiring, or engaged in designs that may be any way prejudicial to the Porte. This often occasions his own deposition; but he is unconcerned about that, as his person is always sacred; and his losing his post is only a step to higher preferment. Bashaws include beglerbegs, and sometimes sangiachegs; though a distinction is sometimes made, and the name bashaw is appropriated to the middle sort or such as have two ensigns or horse-tails carried before them. Those who have the honor of three tails, are called beglerbegs; and those who have only one, sangiachegs. The appellation of bashaw is also given by way of courtesy, at Constantinople, to the lords about the grand seignior's court, the officers in the army, and almost every person of any figure. A bashaw is made with the solemnity of carrying a flag or banner before him, accompanied with music and songs by the Mirialem, an officer whose business it is to invest the bashaws. Bashaw, used absolutely, denotes the prime vizier; the others of that denomination being distinguished by the addition of the province, city, or the like, which they have the command of; as the bashaw of Egypt, of Palestine, &c. The bashaws are the emperor's sponges. We find loud complaints among the Christians who reside in Turkey, of their avarice and extortions. As they buy their governments, every thing is venal with them. When glutted with wealth, the emperor frequently makes them present of a bow-string, and becomes heir to all their spoil. There are also sub-bashaws, or deputy-governors under the bashaws.

Bashaw, Captain, is the title of the Turkish high admiral.

BASHEE Islands, five islands in the Chinese a, and two islets, almost wholly rock, visited y Dampier in 1687, and so named from an reeable intoxicating liquor found here, made m the sugar-cane. The principal one is ange Island, being about twenty-two miles g. and six broad. The other are Monmouth, afton, Goats, and Bashee Proper. The soil is y fertile in the productions of these seas: in 83 the Spaniards formed a settlement on the shee islands, in order to procure the gold ich is said to be washed down by the torrents. e natives fabricate it into wire for ornaments.

ASHEMATH, the daughter of Ishmael, one Esau's wives It appears to have been also a name of Adah, his first wife. See Gen. xxvi. 34. and xxxvi. 2.

BASEDOW (John Bernard), a celebrated writer, born at Hamburgh, in 1723. After studying under Reimarus, he went to Leipsic; and in 1753 was chosen professor of moral philosophy and the belles lettres at Soroe, in Denmark. But having divulged some opinions in religion differing widely from Lutheranism, he was removed from this situation; upon which he formed a plan of reformed education, and raised considerable sums of money for perfecting it. His plan, however, after a partial trial, proved unsuccessful; and he died through intemperance and dissipation in 1790. His writings, though full of dogmatical assertions and fanciful opinions, show him to have been an ingenious man.

BASHILO, a river of Abyssinia, which separates Begamder from Amhara, and falls into the Bahr-el-Azergue, thirty miles south-east of Alata.

BASHKIRS, or Baschkirs, a people of the Russian empire. They call themselves Bashkourt; and derive their origin partly from the Nogay-Tartars, and partly from the Bolgarians. Probably they are Nogays, whom the Bolgares adopted among them: their country at least is a part of the ancient Bolgaria. They formerly roamed about the southern Siberia under the conduct of their own princes: but to avoid the molestations of the Siberian khans, settled in their present possessions, about the rivers Volga and Ural, and were subject to the Kazanian khanate. On the overthrow of that state by czar Ivan II. they voluntarily took refuge under the Russian sceptre: they afterwards, however, frequently revolted against the government, whereby their prosperity as well as their population has been considerably diminished. In the year 1770 they consisted of 27,000 families, having their homes in the governments of Usa and Perme. The Bashkirs have been long without khans; and all their nobility have been gradually destroyed in the civil wars. At present every tribe or wolost chooses for itself one or more ancients, or starschinis; and the whole nation composes thirty-four wolosts. The huts or houses, which they inhabit during winter, are built after the Russian fashion; the principal part, which the family commonly possesses, is furnished with large benches, which serve for beds; the chimney, of a conical form, and of the height of an ordinary man, is in the middle of this division, and so ill constructed, that they are very liable to smoke: on this account the Bashkirs are very subject to various complaints of the eyes. In summer this people inhabit what the Russians call jurtes; they are tents or covers of felt, which, like the huts, have several divisions and a chimney in the centre. A winter village contains from ten to fifty huts; but the summer encampment never exceeds twenty jurtes. These jurtes are a kind of barracks.

The bashkirs have some knowledge of the art of writing, and have schools; but as it is from their own nation that they elect their priests and the instructors of youth, they remain in the profoundest ignorance. With some knowledge of tillage, they retain a liking to the pastoral life; which spoils them for agriculture. They sow but little grain; consequently their harvests afford them, only few resources for the winter, being far from sufficient for their whole consumption. They apply with greater success to the cultivation of bees; making hollows in the trees to serve the purposes of hives: which, to secure from the attacks of the bears, they have invented a variety of ingenious contrivances, both as weapons and traps. One man, in frequent instances, is known to possess at least 500 hives. They have the art of finding out the mountains that contain mines; but, like the Tartars, they would think themselves disgraced by working them themselves. It must be owned, however, that they have not the strength of body which that labor requires. Their practice is to let them out for a term of sixty years to Russian contractors; assigning to them at the same time a tract of forest necessary for the forges. The poorest of them serve for wages in transporting the ore.

The women understand the art of weaving, fulling, and dyeing narrow coarse cloths; they likewise make the clothes for the whole family. They make a small quantity of linen of hemp; but they prefer weaving the filaments of the common nettle, as that plant requires no culture, and the linen they make of it is extremely coarse. They have not the unwholesome practice of steeping their hemp or their nettles in water, but leave them to dry in the air on the top of their huts during the autumn and winter; then stripping off the bark, they pound them in wooden mortars. The men follow the more difficult business of making felt, and of tanning leather. Both sexes wear shirts of the cloth made of nettles; they also wear wide drawers, which descend to the ankle-bone, and a sort of slippers, like people in the East. Both men and women wear a long gown, that of the men being generally of red cloth bordered with fur; this they bind round their middle with a girdle, or with the belt to which they fix their scimitar. The poor have a winter pelisse of sheep-skin, and the rich wear a horse-skin in such a manner that the mane covers their back and waves in the wind. The cap is of cloth like the frustum of a cone, and ten inches high; and that of the rich is usually ornamented with valuable furs. The gown of the wives is made of fine cloth or silk, buttoned before as high as the neck, and fastened by a broad girdle, which the richer classes have made of steel. Their necks and throats are covered with a sort of shawl, on which are several rows of coins, or a string of shells.

The principal wealth of this people consists in their flocks; it is especially from their horses that they derive the necessaries of life; meat, milk, vessels, garments. They have nearly as many and even rather more sheep than horses; and their horned cattle are about half as numerous; they likewise bring up some goats, and only the rich have camels. A man of the ordinary class has seldom fewer than between thirty and fifty horses, many possess 500, and some 1000, 2000, and more. Their sheep are of the broad-tailed species; they esteem the others for the fineness of their wool.

The most opulent of the Bashkirs are those who dwell to the east of the Ural, and in the province of Isset. Some of them are owners of not less than 4000 horses, who fatten in the richest pastures: the wasps and gnats oblige them in the month of June to quit these fine meadows, and retreat to the mountains; the horses then lose their flesh and pine away, but regain their pristine vigor on coming down again to the plains in the month of July.

Though the Bashkirs experience a long and very severe winter, yet they abandon their flocks and droves to the inclemencies of the season. They have neither granaries nor barns; they only lay up a little hay, which they range in cocks round the trees, reserving it for the distempered cattle. Those that are healthy pick up a little grass or moss from beneath the snow, and are often reduced to the necessity of feeding on the bark of the young elms. No farther attention is paid to the camels than to wrap them in some wretched coverings of felt, which they sew about their body. The cattle towards the end of the winter are become lean, weak, and emaciated. Though the females are never kept apart from the males, they rarely bring forth out of season; because the exhausted state of the flocks and herds, during the winter, is unfavorable to generation. Neither the Bashkirs nor the Kalmucs suffer the colts and the calves to suck their dams except during the night, their practice being to milk them in the day-time for their own advantage; kumiss, prepared from mare's milk, being their favorite liquor. (See Kumiss.) They are also fond of a mixture of sour milk and meal, called arjan. In the spring they drink the sap of the birch, which they collect by means of deep incisions in the trees.

Their arms are the bow, the lance, the helmet, and coat of mail; from the Russians they obtain sabres, musquets, and pistols. A Bashkirian army presents a truly curious spectacle; observing no order in marching, they only form into ranks when they halt. Every one leads a horse in his hand, which carries all his provisions. the load, however, is not heavy; consisting only of cheese, some corn dried in the kiln, and a hand-mill to grind it to meal. With the meal they form a ball which they swallow, and which serves them for bread. Each warrior, dressed in his long gown, equips himself as he chooses or as he can. One has procured for himself the various kinds of arms, and carries a whole arsenal with him; the other scarcely possesses more than one ill-conditioned weapon. Such troops as these rendered the armies of the ancient Persians at once so numerous and so little formidable.

They are all well mounted, are skilful in drawing the bow, and dexterously manage their horses. A small number of Bashkirs are easily victorious over a numerous squadron of Kirghises; sometimes one of their regiments will traverse a whole horde of Kirghises, put to flight by their very looks all the enemies they meet, and return triumphant without having sustained the slightest loss. The military service which they are bound to perform, and the only point in which they are galled by the Russian yoke, consists in furnishing, in time of war, 3000 cavalry, which the thirty troops of 100 men each. The Bashkirs are the most negligent and slovenly of the Tartars. In commerce they are the least intelligent; but, at the same time, they are the most hospitable, the most lively, and the most brave. Their diversions at any religious festival, or at a marriage, consist in numerous libations of sour milk, singing, dancing, wrestling, and horse-racing, in which they excel. In their songs they enumerate the achievements of their ancestors, or their own, and sometimes their amorous adventures. Their songs are always accompanied with gestures, which render them very theatrical. Among them old age meets with the greatest respect. In their entertainments, it occupies the place of honor; and the stranger, to whom compliments are paid, is always set among the old men. The language of these people is a Tartar dialect, very different from that spoken at Kasan. The Bashkirians are, like most of the Tartars, Mahommedans; but though they have their mosques, their molaks, and their schools, they are much addicted to superstition and sorcery. Their sorcerers challenge even the devil, and pretend to engage with him in combat; and thus they delude the credulous vulgar, who consult them in their distress, and particularly when they lose any of their mares. Tooke's View of Russia, vol. i. p. 473. Chantreau's Travels, vol. i. p. 281.

BASHUYSEN (Henry James Van), a learned and ingenious divine, born at Hanau, in 1679, where he became professor of the Oriental languages, and ecclesiastical history. He was afterwards professor of divinity, and member of the royal society at Berlin; and had a printing press in his house, from which he sent abroad some curious tracts, principally on rabbinical learning. He died in 1758.

BASIA Ultima. See Ultima.

BASIATRAHAGI, in botany, a name used by some for the common polygonum, or knot-grass.

BASIER, or Basire (Isaac), a learned and active divine in the seventeenth century, was born in the isle of Jersey, in 1607. For some time he was master of the college or free-school at Guernsey: but, at length, became chaplain to Thomas Morton, bishop of Durham, who gave him the rectory of Stanhope, and the vicarage of Egglescliff, in Durham. In July, 1640, he had the degree of D. D. conferred upon him at Cambridge, by mandate; and at Oxford the November following. About that time he was made chaplain in ordinary to king Charles I. and got several other preferments, but did not long enjoy them; for, in the beginning of the civil wars, being sequestered, plundered, and forced to fly, he repaired to king Charles at Oxford, before whom, and his parliament, he frequently preached. Upon the surrender of the Oxford garrison to parliament, unwilling to stay any longer in the British dominions, he resolved to go and propagate the doctrine of the English church in the East, among the Greeks, Arabians, &c. Leaving, therefore, his family in England, he went first to Zante, an island near the Morea, where he made some stay; and had good success in spreading among the Greek inhabitants the doctrines of the English church, the sum whereof he imparted to several of them in a vulgar Greek translation of our Church Catechism. The effect of it was so remarkable, that it drew envy, and consequently persecution, upon him from the Latins. This occasioned his voluntary recess into the Morea, where the metropolitan of Achaia prevailed upon him to preach twice in Greek, at a meeting of some of his bishops and clergy, which was well taken. At his departure he left him a copy of the catechism above-mentioned. From thence, after he had passed through Apulia, Naples, and Sicily again (in which last, at Messina, he officiated for some weeks aboard a ship), he embarked for Syria; and after some months stay at Aleppo, where he had frequent conversation with the patriarch of Antioch, then resident there, he left a copy of the Church Catechism, translated into Arabic, the native language of that place. From Aleppo he went in 1652 to Jerusalem, and so travelled over all Palestine. At Jerusalem he received much honor, both from the Greeks and Latins. Returning to Aleppo, he passed over the Euphrates, into Mesopotamia, where he intended to send the Church Catechism in Turkish, to some of their bishops, who were mostly Armenians. This Turkish translation was procured at Constantinople. After his return from Mesopotamia, he wintered at Aleppo, where he received several courtesies from the consul, Mr. Henry Riley. In the beginning of 1653 he departed from Aleppo, and came to Constantinople by land, being 600 miles, without either servant, or Christian, or any man with him, that could so much as speak the Frank language: yet, by the help of some Arabic he had picked up at Aleppo, he performed that journey in the company of twenty Turks, who used him courteously because he was physician to them and their friends. After his arrival at Constantinople, the French Protestants there desired him to be their minister, though he declared to them his resolution to officiate according to the English liturgy, and promised to settle on him, in three responsible mens' hands, a competent stipend. Upon the Restoration, Dr. Basier was recalled by king Charles II. to England, in a letter written to Prince Ragotzi. But this unfortunate prince dying soon after, of the wounds he received in a battle with the Turks at Gyala, the care of his solemn obsequies was committed to the doctor by his relict, Princess Sophia, whereby he was kept a year longer out of England. At length, returning in 1661, he was restored to his preferments and dignities; and made chaplain in ordinary to king Charles II. He wrote several books on divinity. Having for many years after the Restoration, quietly enjoyed his large revenues, he died in 1676, aged sixty-nine. He wrote, 1. Deo et Ecclesiæ Sacrum, &c. 4to. Oxon. 1646; and 8vo. London, 1668. 2. Diatriba de Antiquâ Ecclesiæ Britannicæ Libertate, 8vo. Brug. 1656, which was translated into English under the title of The Ancient Liberty of the Britannic Church, &c. 8vo. 1661. 3. The History of the English and Scotch Presbytery, 8vo. London, 1659, 1660. 4. Oratio Privata, boni Theologi. (speciatim Concinnatoris Practici) Partes Præcipuas complectens, 8vo. London, 1670. 5. The Dead Man's Real Speech, &c.;

a funeral Sermon on the Death of Dr. John Cosin, Bishop of Durham, 8vo. London, 1673.

BASIL, in botany. See Ocymum.

Basil, or **Basle**, a canton of Switzerland, see Basle.

Basil, in mechanics, the name, among joiners, for the sloping edge of a chisel, or of the iron of a plane. To work on soft wood, they usually make the basil twelve degrees, and for hard wood eighteen; it being remarked that the more acute the basil is, the better the instrument cuts; and the more obtuse, the stronger, and fitter it is for service.

Basil, American Field. See Monarda

Basil (St.), the Great, one of the most learned and eloquent doctors of the church, was born at Cæsarea, in Cappadocia, about A.D. 328; and went to finish his studies at Athens, where he contracted a strict friendship with St. Gregory Nazianzen. He returned to his native country in 355, where he taught rhetoric. Some time after, he travelled into Syria, Egypt, and Lybia, to visit the monasteries of these countries; and the monastic life so much suited his disposition, that upon his return home he resolved to follow it, and he was the first institutor thereof in Pontus and Cappadocia. His reputation became so great, that, upon the death of Eusebius, bishop of Cæsarea, in 370, he was chosen his successor. It was with some difficulty that he accepted of this dignity; and no sooner was he raised to it than the emperor Valens began to persecute him, because he refused to embrace the Arian doctrine. He used his utmost endeavours to bring about a re-union between the eastern and western churches, who were then much divided, not only about points of faith, but with regard to Meletius and Paulinus, two bishops of Antioch; a dispute which was not terminated till nine months after his death. Basil had a share in all the disputes which happened in his time in the east, in regard to the doctrine of the church; and died January 1, 379.—There have been several editions of his works in Greek and Latin. The best is that of Father Garnier, printed in Greek and Latin, in three volumes folio. St. Basil's style is pure and elegant, his expressions are grand and sublime, and his thoughts noble and majestic. Erasmus places him among the greatest orators of antiquity.

Basil (St.), order of. The most ancient of all the religious orders. See Basilian.

Basil Stone. See Thymus.

Basil, Syrian Field. See Ziziphora.

Basil, Wild. See Thymus.

Basil, a physician and heretic, whom Alexius Comnenus caused to be burnt alive in 1118. He held that God had another son besides Jesus Christ, called Sathanael, who, having revolted from his duty to his father, was expelled heaven, and cast to the earth, with the angels whom he had influenced to take part with him; and that Jesus Christ was afterwards sent to destroy his power, who shut him up in hell, and altered his name by cutting of the last syllable. He allowed his followers every thing in common, not excepting their wives.

BASILAN, one of the Philippine islands, in the midst of a cluster of smaller ones, off the south-west extremity of Magindanoa. It is mountainous, and about sixty miles in circumference, abounding in rice, sugar-cane, and bananas. Wild hogs and deer are the principal animals of the interior, which is watered by considerable streams, but thinly peopled. Distant eighteen miles from Magindanao. Long. 121° E., lat. 5° 50′ N.

BASILARE Os, in anatomy, a barbarous denomination given to the os sphenoides, on account of its being situated at the bottom or basis of the skull; or because a great part of the brain rests hereon, as on its basis.

BASILEUS, *βασιλευς*, a title assumed by the emperors of Constantinople, exclusive of all other princes, to whom they give the title rex, king. The same quality was afterwards given by them to the kings of Bulgaria, and to Charlemagne, from the successors of which last they endeavoured to wrest it back again. The title basileus has been since assumed by other kings, particularly the kings of England, Ego Edgar totius Angliæ basileus confirmavi. Hence also the queen of England was intitled basilea and basilissa.

Basileus, in ornithology, a name by which several of the old authors called the regulus cristatus, or golden-crowned wren.

BASILIAN Monks, the religious of the order of St. Basil. That saint having retired into a desert in the province of Pontus, founded a monastery for the convenience of himself and his numerous followers; and for the better regulation of the new society, drew up in writing the orders and rules he would have them follow. This order soon spread all over the east; nor was it long before it passed into the west. The rule of St. Basil was approved by Pope Liberius, the same year in which it was written and published; and afterwards by several other popes; and, in these last ages, by Pope Gregory III. who approved the abridgment made of it by cardinal Bessarion, in the pontificate of Eugenius IV. Some authors pretend, that St. Basil, before he died, saw himself the spiritual father of more than 90,000 monks, in the east only. But this order, which flourished so greatly for more than three centuries, was afterwards considerably diminished by heresy, schism, and a change of empire. The greatest storm it felt was in the reign of Constantine Copronymus; who persecuted the monks of St. Basil, imprisoning some, and banishing others; insomuch that the monasteries were abandoned and spoiled of all their goods. The historians of this order tell us, that it has produced 1805 bishops; and beatified, or acknowledged as saints, 3010 abbots, 11,[illegible] martyrs, and an infinite number of confessors and virgins. They likewise place among the religious of the order of St. Basil, fourteen popes, some cardinals, and a very great number of patriarchs, archbishops, and bishops; and they boast of several emperors and empresses, kings and queens, princes and princesses, who have embraced its rules. This order was introduced in the west in 1057; and was reformed in 1[illegible] by Pope Gregory XIII. who united the religious of this order in Italy, Spain, and Sicily into one congregation; of which the monastery of St.

at Messina is the chief, and enjoys inence over the rest. Each community particular rule, besides the rule of St. which is very general, and prescribes ore than the common duties of a Christian

LIANS. See BOGOMILI.

ILIC, or BASILICI, βασιλικη, a royal in the ancient architecture, denotes a kind lic hall or court of judicature, where the or magistrates sat to administer justice. silics consisted of a great hall, with aisles, es, tribunes, and tribunals. The form was ly that of a parallelogram. The bankers e part of the basilica allotted for their re- . The scholars also went thither to make clamations, according to the testimony of ian. In after times the denomination was also given to other buildings of use, as town-houses, exchanges, burses, like. The Roman basilicæ were covered, ch they were distinguished from the fora, were public places open to the air. The silica was built at Rome by Cato the whence it was called Portia; the second led opimia; the third was that of Paulus, ith a great expense, and with much mag- e, whence it was called by some regia another was built by Julius Cæsar, called julia; of which Vitruvius tells us he had ection. There are eighteen or twenty

LIC is also used in ecclesiastical writers, urch. In this sense, the word frequently in St. Ambrose, St. Austin, St. Jerome, is Appollinaris, and other writers of the and fifth centuries. It is thought that the was thus applied, from many of the an- urches having been formed of the Roman In reality, on the conversion of Con- , many of the ancient basilicæ were given church, and turned to another use, viz. istian assemblies to meet in; as may be d from the passage in Ausonius, where g to the emperor Gratian, he tells him, ilicæ, which heretofore were wont to be with men of business, were now thronged taries praying for his safety: by which he eds mean, that the Roman halls or courts rned into Christian churches: and hence ne came to be a general name for churches ages.

LIC, is chiefly applied, in modern times, rches of royal foundation; as those of n de Lateran, and St. Peter of the Va- t Rome, founded by the emperor Con- e.

LICS, among the ancient Franks, were apels built over the tombs of their great o called, as resembling the figure of the basilicæ, or churches. Persons of inferior on had only tumbæ or porticuli erected em. By an article in the Salique law, he bbed a tumba or porticulus, was to be fteen solidi; but he that robbed a basilica, solidi.

LICS, in literary history, a name supposed been given by the emperor Leo to a col- of laws in honor of his father Basilius I. who began it A. D. 867, and in the execution chiefly made use of Sabbathius Protospatharius, who carried the work as far as forty books. Leo added twenty books more, and published the work in 880. The whole, thirty years after, was corrected and improved by Constantine Porphyrogenitus, son of Leo: whence many have held him the author of the basilica. Six books of the basilica were translated into Latin in 1557, by Gentian Hervetus. An edition of the Greek basilics, with a Latin version, has been since published at Paris, in 1647, by Annibal Fabrottus, in seven volumes. There are still wanting nineteen books, which are supposed to be lost. Fabrottus has endeavoured to supply in some measure the defect, from the synopsis of the basilica and the glosses, of which several had been made under the succeeding emperors, and contained the whole Justinian law, excepting the superfluities, in a new and more consistent order, together with the later constitutions of the emperors posterior to Justinian.

BASILICA, in anatomy, the interior branch of the axillary vein, running the whole length of the arm. It is one of the veins opened in bleeding.

BASILICA, or BASILICUS, in astronomy, a fixed star of the first magnitude, in the constellation Leo; called also Regulus and Cor Leonis.

BASILICA JULIA not only served for the hearing of causes, but for the reception and audience of foreign ambassadors. It was supported by 100 marble pillars in four rows, and enriched with decorations of gold and precious stones. In it were thirteen tribunals or judgment seats, where the prætors sat to despatch causes. See BASILIC.

BASILICA, MODERN. Palladio gives this name to the civil edifices which are found in many Italian cities, and the destination of which is entirely similar to the antique basilica. 'In imitation of the ancients,' says this celebrated architect, 'the cities of Italy construct public halls which may rightly be called basilicæ, as they form part of the habitation of the supreme magistrate, and in them the judges administer justice.' 'The basilicæ of our time,' he continues, 'differ in this from the ancient; that those were level with the ground, while ours are raised upon arches, in which are shops for various arts and merchandise of the city. There the prisons are also placed, and other buildings belonging to the public business. Another difference is, that the modern basilicæ have the porticoes on the outside, while in the ancient they were only in the interior. Of these halls there is a very noble one at Padua; and another at Brescia, remarkable for its size and ornaments.' The most celebrated of this kind is that of Vicenza; the exterior part of which was built by Palladio, and the whole so much altered that it may pass for his work. The body of the building is of much greater antiquity, though the date of it is unknown. Time, and various accidents had reduced this edifice to such a state of decay, that it was necessary to think seriously of preventing its total ruin: for this purpose the most eminent architects were consulted, and the design of Palladio was approved. He removed the ancient loggias, and substituted new porticoes of a very beautiful invention. These form two galleries in height, the lower order of which is ornamented with Doric engaged columns, at very wide intervals, to answer to the internal pillars of the old buildings; the space between each column is occupied by an arch resting on two small columns of the same order, and a pilaster at each side against the large columns, which leaves a space between it and the small columns of two diameters The upper portico of Ionic columns is disposed in the same manner, and a balustrade is placed in the archway. The entablature of the large orders is profiled over each column.

This edifice is about 150 feet long and sixty feet broad; the hall is raised above the ground twenty-six feet; it is formed by vaults supported on pillars, and the whole is covered with a wooden dome.

BASILICATA, a territory of Italy, bounded on the north by the provinces of Otranto, Bari, and Capitanata, on the west by the Principato, and a small part of the Tuscan Sea, on the south by Calabria, and on the east by the Gulf of Taranto. It is watered by several rivers; but as it is almost all occupied by the Appennine mountains, it is neither very populous nor fertile; however, it produces enough to maintain its inhabitants, and has a small quantity of cotton. The principal towns are Acerenza the capital, Melfi, Tursi, Rapolla, Muro, Lavello, Tricarico, Monte Peloso, and Venesa, which are all episcopal sees. Its extent is about 1,605,047 moggie; five moggie being equivalent to four English acres; and it has a population of nearly 330,000 souls. It is watered by the Basiento, and several other streams. In this province are the ancient ruined cities of Heraclea and Metapontum.

BASILICI, *βασιλικοι*, in the Greek empire, was a denomination given to the prince's mandatories, or those who carried his orders.

BASILICON, in pharmacy, a name given to several compositions to be found in ancient medicinal writers. At present it is confined to three officinal ointments, distinguished by the epithets black, yellow, and green. See PHARMACY, &c.

BASILICON, or BASILICUM, in pharmacy, is callee tetrapharmacum, as being composed of four simples, viz. resin, wax, pitch, and oil of olive.

BASILICUS SINUS, in ancient geography, the gulf of Mellasso, in Asia Minor, which separates Lycia and Caria.

BASILIDES, an Egyptian, who lived near the beginning of the second century. He was educated in the Gnostic school, over which Simon Magus is once said to have presided; and with whom he agreed that Christ was a man in appearance, that his body was a phantom, and that he gave his form to Simon the Cyrenian, who was crucified in his stead. We learn from Eusebius, that this heresiarch wrote twenty-four books upon the gospel, and that he forged several prophets; to two of which he gave the names barcaba and barcoph. We have still the fragment of a Basilidian gospel.

BASILIDIANS, a denomination, in the second century, from Basilides, chief of the Egyptian Gnostics. They acknowledged, according to ancient writers, the existence of one supreme God, perfect in goodness and wisdom, who produced from his own substance seven beings, or aions, of a most excellent nature. Two of these aions, called dynamis and sophia, i. e. power and wisdom, engendered the angels of the highest order. These angels formed a heaven for their habitation, and brought forth other angelic beings of a nature somewhat inferior to their own. Many other generations of angels followed. New heavens were also created, until the number of angelic orders, and of their respective heavens, amounted to 365, and thus equalled the days of the year. All these are under the empire of an omnipotent Lord, whom Basilides called Abraxas. The inhabitants of the lowest heaven, which touched upon the borders of the eternal, malignant, and self-animated matter, conceived the design of forming a world from that confused mass, and of creating an order of beings to people it. This design was carried into execution, and was approved by the supreme God, who to the animal life, with which only the inhabitants of this new world were at first endowed, added a reasonable soul, giving at the same time to the angels the empire over them.

These angelic beings, advanced to the government of the world which they had created, fell by degrees from their original purity, and soon manifested the fatal marks of their depravity and corruption. They not only endeavoured to efface in the minds of men their knowledge of the supreme Being, that they might be worshipped in his stead, but also began to war against each other, with an ambitious view to enlarge every one the bounds of his respective dominion. The most arrogant and turbulent of all these angelic spirits, was that which presided over the Jewish nation. Hence, the supreme God, beholding with compassion the miserable state of rational beings, who groaned under the contest of these jarring powers, sent from heaven his son Nus, or Christ, the chief of the aions, that, joined in a substantial union with the man Jesus, he might restore the knowledge of the supreme God, destroy the empire of those angelic natures which presided over the world, and particularly that of the arrogant leader of the Jewish people. The god of the Jews, alarmed at this, sent forth his ministers to seize the man Jesus and put him to death. They executed his commands; but their cruelty could not extend to Christ, against whom their efforts were vain. Those souls who obey the precepts of the Son of God, shall, after the dissolution of their mortal frame, ascend to the Father, while their bodies return to the corrupt mass of matter whence they were formed. Disobedient spirits, on the contrary, shall pass successively into other bodies. There are several gems still subsisting, inscribed with the name Abraxas, which were used by the Basilidians as amulets against diseases and evil spirits. See ABRAXAS.

BASILIGOROD, or VASILIGOROD, a town of Russia, seated on the Volga, where the Sura falls into it. The inhabitants are employed in agriculture and fishing. It is 112 leagues from Moscow.

BASILINEA, in entomology, a species of phalæna, a native of Austria.

BASILIPOTAMO, the ancient Eurotas

river of European Turkey, in the south of the Morea, which falls into the Gulf of Kolokythia, about four miles to the N. N. E. of the town of that name.

BASILIPPUM, in ancient geography, a town of Bætica, in Spain; now called Cantillana, a citadel of Andalusia, above Seville, on the Guadalquiver.

BASILISCUS, in alchemy, the sublimate mercury of the philosophers.

Basiliscus, in ornithology, a name given by some of the old authors to the regulus cristatus, or golden-crowned wren. It is a diminutive of basileus, king, another of its names, because of its golden crown.

Basiliscus, Basilicus, in zoology, a species of lacerta, which, according to Linnæus, has the tail long and round, dorsal fin radiated, and back of the head crested. This is the basilisk of modern naturalists, and seems to unite the two genera of lacerta and draco. The remarks of Dr. Shaw, in the Gen. Zool. on this extraordinary creature, are highly interesting, and ought not to escape attention. It is, accordiny to this writer, particularly distinguished by a long and broad winglike process or expansion, continued along the whole length of the back, and to a very considerable distance on the upper part of the tail, and furnished at certain distances with internal radii, analagous to those in the fins of fishes, and still more so to those in the wings of the draco volans, or flying lizard. This process is of different elevations in different parts, so as to appear strongly sinuated and indented, and is capable of being either dilated or contracted at the pleasure of the animal. The occiput, or hind part of the head, is elevated into a very conspicuous pointed hood, or hollow crest.

'Notwithstanding its formidable appearance,' adds this author, 'the basilisk is a perfectly harmless animal; and like many others of the lizard tribe, resides principally among trees, where it feeds on insects, &c. It has long ago been admirably figured in the work of Seba; and as it is an extremely rare species, has sometimes been considered, from the strangeness of its form, as a fictitious representation. There is, however, in the British Museum, a very fine specimen, well preserved in spirits, and which fully confirms the excellency of Seba's figure; from which, in all probability, Linnæus himself, who never saw the animal, took his specific description. The color of the basilisk is a pale cinereous brown, with some darker variegations towards the upper part of the body. Its length is about a foot and half. The young or small specimens have but slight appearance either of the dorsal or caudal process, or of the pointed occipital crest. The basilisk is principally found in South America, and sometimes considerably exceeds the length before mentioned, measuring three feet, or even more, from the nose to the extremity of the tail. It is said to be an animal of great agility, and is capable of swimming occasionally with perfect ease, as well as of springing from tree to tree by the help of its dorsal crest, which it expands in order to support its flight.'

Among the French naturalists, the iguane is a distinct genus of the oviparous quadrupeds, in which the Linnæan lacerta basiliscus is included under the name of basilisk.

The basilisk of the ancients existed only in the glowing fancy of their poets: they feigned it to be the most malignant of all poisonous serpents; as a creature whose breath empoisoned the very air, and whose baneful glance would alone prove fatal to all other animals. A creature gifted with such extraordinary powers could have no common origin, and therefore it was asserted to be the produce of the egg of a cock brooded upon by a serpent. Galen says its color is yellowish, and that it has three little elevations on its head, speckled with whitish spots, that have somewhat the appearance of a crown. Ælian, Matthiolus, Pliny, Lucan, and others of the most distinguished ancients, relate many marvellous properties of this creature; but, notwithstanding their authority, the basilisk, as they represent it, is most unquestionably fabulous. It is needless to add to this article any of the fables of Jerome Lobo, although Dr. Johnson has received some of them with an unwarrantable degree of credulity. The learned Prosper Alpinus informs us, on the authority of some relations, which he seems to have credited, that near the lakes contiguous to the sources of the Nile, there is a number of basilisks, about a palm in length, and the thickness of a middle finger; that they have two large scales which they use as wings, and crests and combs upon their heads, from which they are called basilisci or reguli; that is, crowned, crested, or kingly serpents. And he says, that no person can approach these lakes without being destroyed by these crested snakes. Our traveller, Mr. Bruce, observes, that having examined the lake Goderoo, those of Court Ohha and Tzana, the only lakes near the sources of the Nile, he never saw one serpent there, crowned or uncrowned; and that he never heard of any: and, therefore, he believes this account as fabulous as that of the acontia, and other animals, mentioned by Prosper Alpinus, lib. iv. cap. 4. The basilisk is a species of serpent frequently mentioned in scripture, though never described farther than that it cannot be charmed so as to do no hurt, nor trained so as to delight in music; which all travellers who have been in Egypt allow is very possible, and frequently seen, Jerem. viii. 17.: Psalm ix. 13. However, it is the Greek text that calls this serpent basilisk; the Hebrew generally calls it tsepha, which is a species of serpent real and known. Our English translation very improperly renders it cockatrice, a fabulous animal that never did exist. The basilisk of scripture seems to have been a snake, not a viper; as its eggs are mentioned, Isaiah ix. 5: whereas it is known to be the characteristic of the viper to bring forth living young. *Bruce's Travels in Abyssinia*, vol. v. p. 201.

BA'SILISK, *n. s.* Lat. *basiliscus*, from Gr. βασιλισκος, of βασιλευς, a king. A serpent, thus denominated either because its head is adorned with a tuft like a diadem, or because of its superior strength it is the monarch of the reptile tribes. To this creature is ascribed the power of fascinating its victims with its eyes. See the article Basiliscus.

That sleth right as the *basilicok* sleth folk by a venime of his sight. *Chaucer. The Persones Tale.*

Basilisks! whose breath
Is killing poison, and whose looks are death.

Make me not sighted like the *basilisk*;
I've look'd on thousands who have sped the better
By my regard, but kill'd none so. *Shakspeare.*
Thine eyes, sweet lady, have infected mine.
LADY ANNE. Would they were *basilisks* to strike thee dead, *Id.*

The *basilisk* was a serpent not above three palms long, and differenced from other serpents by advancing his head, and some white marks or coronary spots upon the crown. *Brown's Vulgar Errours.*

BA'SILISK. A species of cannon or ordnance.

We practise to make swifter motions than any you have; and to make them stronger and more violent than your's are; exceeding your greatest cannons and *basilisks.* *Bacon.*

Your eyes, which hitherto have borne in them
Against the French, that met them in their bent,
The fatal balls of murdering *basilisks.* *Shakspeare.*

And thou hast talk'd
Of sallies, and retires; of trenches, tents.
Of palisadoes, frontiers, parapets;
Of *basilisks*, of cannon, culverin,
Of prisoner's ransom, and of soldiers slain. *Id.*

BASILISK, in military affairs, a piece of ordnance; thus denominated from its resemblance to the supposed serpent of that name. The basilisk has thrown an iron ball of 200 pound weight. It was much talked of in the time of Solyman, emperor of the Turks, in the wars of Hungary, but seems now out of use. Paulus Jovius relates the terrible slaughter made by a single ball from one of these basilisks in a Spanish ship; after penetrating the boards and planks in the ship's head, it killed above thirty men. Masseus speaks of basilisks made of brass, which were drawn each by 100 yoke of oxen. Modern writers also give the name basilisk to a much smaller and more sizeable piece of ordnance, which the Dutch make fifteen feet long, and the French only ten. It carries forty-eight pounds.

BASILISSA. See BASILEUS.

BASILIUS I. surnamed the Macedonian, emperor of the Greeks. He was a common soldier, and of an obscure family in Macedonia, and yet raised himself to the throne: for, having pleased the emperor Michael by his address in the management of his horses, he became his first equerry, and then his great chamberlain. He at length assassinated the famous Bardas, and was associated to the empire in 849. He held the eighth general council at Constantinople; deposed the patriarch Photius, but in 858 restored him to the patriarchate; and declared against the popes, who refused to admit him into their communion. He was dreaded by the Saracens, whom he frequently vanquished; and loved by his subjects for his justice and clemency. He died in 886. Under his reign the Russians embraced Christianity, and the doctrine of the Greek church.

BASILIUS II. succeeded Romanus II. as emperor of Constantinople, A. D. 903, and reigned along with his brother, Constantine IX., six years. This monarch is by some historians and chronologists confounded with Basilius III. who had also a brother colleague, called Constantine. See the next article.

BASILIUS III. succeeded John Zimisces, emperor of Constantinople, A. D. 975, and reigned, along with his brother Constantine X., for no less a period than fifty years. His brother survived him three years, the one dying in 1025, and the other in 1028. See CONSTANTINOPLE.

BASILUZZO, one of the Lipari islands.

BA'SIN, *n.* } Fr. *basin*; Ital. *bacile*, *bacino*;
BA'SINED. } it is often written bason, but not according to etymology. It is a term which designates a vessel in common use. It is also applied to any hollow place capacious of liquids, and is technically employed by anatomists and artizans, to express any substance hollowed out, a round cavity, or a concave.

But let us go now to that horrible swering of adjuration and conjuration, as don these false enchantours and nigromancers in *basins* full of water, or in a bright swerd in a circle or in a fire, or in a shelder bone of a shepe: I cannot sayn but that they do cursedly and damnably ayenst Crist, and all the faith of holy chirche. *Chaucer. The Persones Tale.*

After that he poured water into a *basin*, and beganne to wash his disciples feet. *Bible*, 1551.

Let one attend him with a silver *basin*,
Full of rose-water, and bestrewed with flow'rs.
Shakspeare.

We have little wells for infusions, where the waters take the virtues quicker and better than in vessels and *basins.* *Bacon.*

And send her home
Divested to her flannell in a cart,
And let her footman beat the *bason* afore her.
Ben Jonson, New Inn

With scornful sound of *bason*, pot and pan,
They thought to drive him thence, like bees in swarms. *Harr. Ariost.*

The jutting land two ample bays divides;
The spacious *basins* arching rocks inclose,
A sure defence from every storm that blows. *Pope.*

On one side of the walk you see the hollow *basin*, with its several little plantations lying conveniently under the eye of the beholder. *Spectator.*

If this rotation does the seas affect,
The rapid motion rather would eject
The stores the low capacious caves contain,
And from its ample *basin* cast the main.
Blackmore.

From step to step, with sullen sound,
The forc'd cascades indignant leap;
Now sinking fill the *bason's* measur'd round;
There in a dull stagnation doom'd to sleep.
Mason. Ode to a water-nymph.

Thy *basin'd* rivers and imprison'd seas.
Young's Night Thoughts.

BASING, a village of Hampshire, north of Basingstoke, near which, in 871, Alfred was defeated by the Danes. It is equally memorable for the protracted siege sustained here by John, the fifth marquis of Worcester, in his seat of Basing-house, against the forces of the Parliament. The investment commenced August 1643, and the answer made by the marquis to the first summons was, that 'if the king had no more ground in England than Basing-house, he would maintain it to the uttermost.' It stood out till October, 1645, when Cromwell took it by storm, and burnt it to the ground. A saying still exists in the neighbourhood, 'clubs trumps as when Basing-house was taken;' and tradition refers this to the surprise of the garrison, who were at cards when finally assaulted. The d written with a diamond on every pane of Aymez Loyaulté, which is still the family

The plunder obtained by the parliamen- rces amounted to £200,000, but their loss the walls exceeded 2000 men. See Journal siege of Basing-house, Oxford, 1645.

SINGE (John), more commonly known name of Basingstochius, or de Basing- was born at Basingstoke, a town of shire, and from thence took his surname. s a person highly eminent for virtue and g. For having very good natural parts, he proved them by study, that he became a master of the Latin and Greek languages, nent orator, a complete mathematician, a philosopher, and a sound divine. The tion of his great learning he laid in the sity of Oxford, and, for his further im- nent, went to Paris, where he resided some

He then travelled to Athens, where he many curious observations, and perfected f in his studies, particularly in the know- of the Greek tongue. At his return to nd, he brought over with him several curi- reek manuscripts, and introduced the use Greek numeral figures into this kingdom. came also a very great promoter and ager of that language, which was much ted in these western parts of the world; facilitate it, he translated from the Greek atin a grammar, which he entitled The us of the Greeks. He was archdeacon of n, and afterwards, of Leicester. He died 2.

SINGSTOKE, a market town in Hamp- which by means of a canal, begun in 1778, on an extensive trade. The navigation unicates with the Thames. The church is rage, in the patronage of Magdalen college, d. One of its vicars, Sir George Wheeler, lebrated eastern traveller, annexed a library church. This town was the birth-place of h and Thomas Warton, whose father was It lies sixteen miles north-east of Win- r, and forty-six from London.

SIOGLOSSUS, a muscle arising from the f the os hyoides. See Anatomy.

SIS. Lat. *basis*; βασις, from βαινω, I go. ASE. The foundation or the first principle thing; the lowest of the three principal of a column, which are the basis, shaft and l.

> ust follow, that Paradise, being raised to this must have the compass of the whole earth for and foundation. *Raleigh.*

> ow many times shall Cæsar bleed in sport,
> now on Pompey's *basis* lies along
> worthier than the dust! *Shakspeare.*

> scend my chariot, guide the rapid wheels
> shake heaven's *basis.* *Milton.*

> In altarwise a stately pile they rear;
> he *basis* broad below and top advanc'd in air.
> *Dryden.*

> ——The friendships of the world are oft
> onfederacies in vice, or leagues of pleasure;
> urs has severest virtue for its *basis.* *Addison.*

> no *bases* bear my rising name,
> fall'n ruins of another's fame,
> each me, heaven! to scorn the guilty bays,
> from my breast that wretched lust of praise.
> *Pope. Temple of Fame*

Basis, in ancient music and poetry, denotes the equability of sounds proceeding in the same tenor, and stands contradistinguished from arsis, or elevation, as well as from thesis or depression.

Basis, or Base, in chemistry, any body which is dissolved by another body, which it receives and fixes, and with which it forms a compound, may be called the basis of that compound. Thus, for example, the bases of neutral salts are the alkaline, earthy, and metallic matters which are saturated by the several acids, and form with them these neutral salts. In this sense it is that these neutral salts are called salts with earthy bases, salts with alkaline bases, salts with metallic bases; also the appellations basis of alum, basis of nitre, basis of Glauber salt, basis of vitriol, &c. signifying the argillaceous earth, which, with the vitriolic acid, forms alum; the vegetable alkali, which, with the nitrous acid, forms nitre; the mineral alkali, which, with the vitriolic acid, forms Glauber's salt; and the metal which, with the vitriolic acid, forms a vitriol; because the substances are supposed to be fixed, unactive, and only yielding to the action of the acids, which they fix, and to which they give a body and consistence.

Basis or Base, in geometry. See Base.

Basis, in oratory, denotes the fourth member of a complete exordium, being that which succeeds the apodosis, and prepares the way for the proposition.

Basis, in pharmacy, the principal ingredient in compound medicines.

BASIUM, Lat. a kiss, a word used by chemists, for an extemporaneous tincture of iron and copper, invented by Clossæus.

BASK, *v. a.* & *n.* } *Backeren*, Dutch, pro-
Basking. } bably from the verb to bake; to warm by exposure to heat, whether of the sun or fire; to lie in the warmth, used, says Johnson, almost always of animals; and, if in the term animals he includes man, he is not far from the truth; though it is sometimes applied to reptiles.

> As I live by food, I met a fool,
> Who laid him down, and *bask'd* him in the sun,
> And rail'd on lady fortune in good terms,
> In good set terms, and yet a motley fool.
> *Shakspeare.*

> Loue in her sunny eyes does *basking* play,
> Loue walks the pleasant mazes of her hair;
> Loue does on both her lips for ever stray,
> And sows and reaps a thousand kisses there.
> *Cowley. The Change.*

> Then lies him down the lubber fiend,
> And stretch'd out all the chimney's length
> *Basks* at the fire his hairy strength. *Milton.*

> 'Tis all thy business, business how to shun,
> To *bask* thy naked body in the sun. *Dryden.*

> About him, and above, and round the wood,
> The birds that haunt the borders of his flood,
> That bath'd within, or *bask'd* upon his side,
> To tuneful songs their narrow throats applied. *Id.*

> Some in the fields of purest æther play,
> And *bask* and whiten in the blaze of day. *Pope.*

> Unlock'd in covers let her freely run
> To range thy courts, and *bask* before the sun.
> *Tickell.*

> O life! thou universal wish; what art thou!
> Thou'rt but a day—a few uneasy hours:

Thy morn is greeted by the flocks and herds,
And every bird that flatters with its note,
Salutes thy rising sun: thy noon approaching,
Then haste the flies, and every creeping insect,
To *bash* in thy meridian; that declining,
As quickly they depart, and leave thy evening
To mourn the absent ray: the night at hand,
Then croaks the raven conscience of time mispent,
The owl despair screams hideous, and the bat
Confusion, flutters up and down:
Life's but a lengthen'd day, not worth the waking for.
Howard's Charles I.

The naked negro, panting at the Line,
Boasts of his golden sands and palmy wine;
Basks in the glare, or stems the tepid wave,
And thanks the gods for all the good they gave.
Goldsmith's Traveller.

Too late, all lost, for ever lost, he sees
The envy'd saints triumphing from afar,
And angels *basking* in the smiles of God. *Rowe.*
Childe Harolde *bask'd* him in the noontide sun
Disporting there like any other fly.
Byron. Childe Harold.

BASKERVILLE (John), an eminent artist, especially in letter-founding and printing, was born in 1706, at Woverley in Worcestershire, and was heir to an estate of about £60 a year; the whole income of which he allowed to his parents till their deaths. In his early years he conceived a love for fine writing, and cutting in stone; and, being brought up to no particular profession, he commenced writing-master in Birmingham when about twenty years of age. The improvements in different manufactures there soon drew his attention, and he applied to the japan business, which he carried on for a long time with distinguished excellence and success. In 1750 he applied himself to letter-founding, the bringing of which to perfection cost him much labor and expense. In a few years he proceeded to printing; and his first work was an edition of Virgil, in royal 4to. which now sells for three guineas. He obtained leave from the university of Cambridge to print a bible in royal folio, and editions of the common prayer-book, in three sizes; for which he paid a large sum. He afterwards printed Horace, Terence, Catullus, Lucretius, Juvenal, Sallust, and Florus, in royal 4to; Virgil in 8vo.; and several books in 12mo. He published, likewise, some of the English classics. These performances are the best testimonies of Mr. Baskerville's merit; and his name is deservedly ranked among those who, in modern times, have brought the art of printing to its greatest perfection. Not meeting, however, with that encouragement from the booksellers, which he expected, he set up a letter-foundry for sale, a little before his death. He died without issue in 1775.

BASKERVILLE (Sir Simon), an eminent anatomist, and physician to king James I. and Charles I. was the son of Thomas Baskerville, apothecary, and born at Exeter in 1573. He studied at Oxford, where he early displayed his abilities, and at last took his degrees of B. D. and M. D. in 1611. He afterwards settled at London, where he became a member, and was for some time president of the college of physicians. His reputation for learning and medicine, attracted the attention and esteem of the two sovereigns above-mentioned, the latter of whom knighted him. He wrote some memoirs of his own life and times, and died in 1641, aged sixty-eight.

BA'SKET, *n. s. basged*, welch; *bascauda*, Latin; perhaps, from the French *bosse*, or from some British word signifying *rush*; basket is a vessel or utensil formed of osiers, rushes, or twigs, splinters, or other slender bodies interwoven.

For I wol proche and beg in sondry londes,
I wol not do no labour with min hondes,
Ne make *baskettes* for to live there by,
Because I wol not beggen idelly.
Chaucer. The Pardoneres Tale.

Here is a *basket*: he may creep in, and throw foul linen upon him, as if going to bucking. *Shakspeare.*

Set down the *basket*, villain:—Somebody call my wife:—You youth in a *basket* come out here. *Id.*

He threw out, to save life,
Your British *baskets*, with a thousand dishes.
Holyday's Juvenal.

Poor Peg was forced to go hawking and puddling; now and then carrying a *basket* of fish to the market.
Arbuthnot.

His puissant sword unto his side,
Near his undaunted heart, was ty'd,
With *basket*-hilt that would hold broth,
And serve for fight and dinner both. *Hudibras.*

There was a time,
When other regions were the swain's delight;
And shepherdless Britannia's rushy vales,
Inglorious, neither trade nor labour knew,
But of rude *baskets*, homely rustic geer,
Woven of the flexile willow. *Dyer. The Fleece.*

BASKET, as a measure, denotes an uncertain quantity; as, a basket of medlers is two bushels, of assafœtida from twenty to thirty pound weight. The ancient Britons were noted for their ingenuity in making baskets, which they exported in large quantities. They were of very elegant workmanship, and bore a high price. Martial takes notice of them:—

Barbara de pictis veni bascauda Britannis,
Sed me jam mavult dicere Roma suam.
'A basket I, by painted Britons wrought,
And now to Rome's imperial city brought.'

Baskets are generally made of osiers, stripped of their bark, and dressed according to the design of the basket. Large baskets or hampers are made without any preparation but soaking the wood, which is necessary for every size of basket. No great capital of money or ingenuity is requisite to follow the business of a basket-maker; yet some practice as well as dexterity would seem necessary in forming fruit baskets used on tables, work baskets, table mats, &c.

BASKET, CORBEILLE, in architecture, a kind of vase, or figure piece of sculpture, in form of a basket, filled with flowers or fruits, serving to terminate some decoration.

BASKET FISH a species of sea-star. See ASTERIAS.

BASKET-MAKING, the weaving of reeds, twigs, or leaves together, for baskets, is an art in use among the rudest nations of the world; even an inferior specimen is seen among the natives of Van Diemen's Land, consisting of a bunch of rushes tied together at each end, and spread out in the middle. Other tribes of this neighbourhood make a basket of leaves interwoven, so skilfully executed, that it retains either milk or water

Very early in our history it is recorded that our ncestors made baskets, which were celebrated t Rome. At the same period, shields of wicker-work, plain or covered with hides, were common n Britain; wicker boats, &c. Herodotus speaks of boats of this kind, covered with bitumen, on he Tigris and Euphrates. Such boats, about even feet in diameter, are said to be used at the present day on these rivers; and similar ones, we know, are employed in crossing the most rapid treams of India. They are generally of a shalow construction, from three to fifteen feet in diameter; some will carry thirty men. They are made thus:—A number of pieces of split bamboo, twenty for example, are laid on the ground, rossing each other near the centre, and there astened with thongs; the ends of the bamboos re then elevated by several persons, and fixed sunder at due distance by means of stakes, in which position they are bound by other long slips of bamboo. The latter are introduced alternately over and under the pieces first crossed, and tied t the intersections to preserve the shape. This being completed, beginning from the bottom to the centre, the parts above the intended height or depth of the basket-boat are cut off, and it is iberated from the stakes reversed, and covered with half-dressed hides sewed together with hongs. Six men will make one of these boats n as many hours. They are navigated by paddles where the water is deep, or are pushed over a shallow bottom with long poles; and the passengers are kept dry by planks at the bottom. The basket-boats on the river Kristna, in Hindostan, are about twelve feet in diameter, and four feet deep. Armies have been enabled by these conveyances to continue their march, and even heavy artillery has been transported by them. Sometimes they are towed by bullocks. In other parts of the world, houses, cottages, fences, and gates, are formed of basket or wicker-work. On the continent, a two-horse carriage, called a Holstein waggon, of very considerable size, and fit to carry several persons, is composed of basket-work; the same is done in Great Britain with regard to the bodies of gigs; and an appendage of the stage-coaches, we know, is literally denominated the basket.

This is an art therefore, however humble in some of its branches, too extensively and too serviceably in exercise not to merit more attention than books of science have usually bestowed upon The materials employed have been very various. Twigs, branches, straw, and whalebone, rushes, roots of plants, the bowing bamboo, and the supple osier. The natives of some parts of South America make baskets of rushes, so closely interwoven as to hold water, and thousands of them are annually sold throughout the new republics. The Caffres and Hottentots are alike skilful with roots. Osiers or willows, however, are most adapted for this use. These are either taken entire, cut from the root, split asunder, or stripped of their bark, according to the work to be produced; in the latter case, they are previously well soaked. The stripping is performed by drawing the willows through an iron-edged instrument called brakes, which removes the bark, and the willows are then cleaned, so far as necessary, by the manual operation of a sharp knife. Next they are exposed to the sun and air, and afterwards placed in a dry situation. But it is not less necessary to preserve willows with their bark in the same manner, for nothing can be more injurious than the humidity inherent in the plant; and previous to use, they must be soaked in water some days. The barked or white osier is then divided into bundles or faggots according to size; the larger being reserved to form the strong work in the skeleton of the basket, and the smaller for weaving the bottom and sides. Should the latter be applied to ordinary work, they are taken whole, but for implements of slight and finer texture, each osier is divided into splits and skeins; which names denote the different degrees of size to which they are reduced. Splits are osiers cleft into four parts, by means of a particular implement employed for that purpose, consisting of two edge tools placed at right angles, whereby the rod is longitudinally divided down the pith. These are next drawn through an implement resembling the common spoke-shave, keeping the grain of the split next the wood or stock of the shave, while the pith is presented to the edge of the iron, which is set in an oblique direction to the wood: And, in order to bring the split into a shape still more regular, it is passed through another implement called an upright, consisting of a flat piece of steel, each end of which is fashioned into a cutting edge, like that of an ordinary chisel. The flat is bent round, so that the two edges approach each other at a greater or less interval by means of regulating screws, and the whole is fixed in a handle. By passing the splits between the two edges, they are reduced to skeins, the thickness of which is determined by the interval between the edges of the tool. All the implements required by a basket-maker are few and simple: they consist, besides the preceding, of knives, bodkins, and drills for boring, leads for keeping the work steady while in process, and where it is of small dimensions, a heavy piece of iron, called a beater, which is employed to beat the basket close as it is augmented.

In making an ordinary basket, the osiers are laid out in a length considerably greater than that of the finished work. They are ranged in pairs on the floor parallel to each other, at small intervals, in the direction of the longer diameter; and this may be called the woof, for basket work is in fact a web. These parallel rods are then crossed at right angles by two of the largest osiers, with the thick ends towards the workman, who places his foot upon them; and weaving each alternately over and under the parallel pieces first laid down, they are by that means confined in their places. The whole now forms what is technically called the slat or slate, which is the foundation of the basket. Next, the long end of one of the two rods is taken, and woven under and over the pairs of short ends all round the bottom, until the whole be woven in. The same is done with the other rod; and then additional long osiers are also woven in, until the bottom be of sufficient size, and the woof be occupied by them. Thus the bottom, or foundation on which the superstructure is to be raised, is finished; and this latter part is accomplished by sharpening the large ends of as many long and stout osiers as may be necessary to form the ribs or skeleton. These are forced or plaited between the rods of the bottom, from the edge towards the centre, and are turned up in the direction of the sides; then other rods are woven in and out between each of them, until the basket is raised to the intended height, or, more correctly speaking, the depth it is to receive. The edge or brim is finished by turning down the perpendicular ends of the ribs, now protruding and standing up over each other, whereby the whole are firmly and compactly united. A handle is adapted to the work, by forcing two or three osiers sharpened at the end, and cut to the requisite length, down the weaving of the sides, close together; and they are pinned fast, about two inches from the brim, in order that the handle, when completed, may be retained in its proper position. The osiers are then either bound or plaited, in such fashion as pleases the taste of the artist. This is the most simple kind of basket; some are of finer materials, and nicer execution. The skeins are frequently smoked and dyed, of different colors, by intermixing which, a good effect is produced.

At Liverpool, where there is an asylum for the blind, this art has, from its happy simplicity, been extensively taught, and is practised with success. In the city of Edinburgh, a number of the blind find similar employment in a blind asylum.

Some of the best materials for basket-making have been imported into Great Britain from France and Holland; but the duration of the war induced the inhabitants of this country to endeavour to obtain a home supply; and Mr. Philips, of Ely, has received a premium from the Society of Arts, on account of his excellent observations on this subject. He also has been very successful in his cultivation of the osier. Of nine or ten species of osier, he remarks that only one, the grey or brinkled osier is of any use. See Transactions of the Society, and our article Osier.

Basking Shark, in ichthyology, a species of shark, the squalus maximus of Linnæus, so called from its lying in the sun on the surface of the water. This fish inhabits the Arctic and European seas, feeds on the smaller cetaceous animals, and grows to a prodigious size, but is not very fierce. The liver is very large, and produces much oil. See Squalus.

BASLE, Bale, or Basil. One of the nineteen cantons of Switzerland, which joined the confederacy in the year 1501. It is bounded on the south by the canton of Solothurn; on the north by the Brisgau; on the east by Frickthal; and on the west by part of Solothurn, the former diocese of Basle, and the Sundgau; being upwards of twenty miles in length, and about eighteen in breadth. It contains three towns, twenty-seven parishes, seven bailiwics, and 38,000 inhabitants; the supposed area being about 181 square miles. Although the mountains are barren, the lower parts are fruitful in corn and wine, and fit for pasture; hemp also abounds here. It has many medicinal springs and baths, and the air is wholesome and temperate. The people are protestants: both men and women for the most part wear the French dress; but the language commonly spoken is German, though the French also is much used. By the constitution of 1803, the legislative power is vested in the large council of 135, elected from among the citizens at large; it assembles every half year in the town of Basle, and sits for a fortnight at a time. The executive power is intrusted to the small council of twenty-five, chosen from among the members of the large council, and having at its head two burgomasters, who preside alternately. The whole canton is divided into the three districts of Basle (the town), Wallenburg, and Liestal, each of which is subdivided into fifteen corporations. Every inhabitant who rents land or houses to the value of 500 Swiss francs, has a seat in one of these corporations, and is by virtue of it entitled to vote at the election of members for the large council. This canton sends three representatives to the diet. Before the revolution its government was aristocratical; and its revenues arise chiefly from secularised abbeys, and imposts on goods carried through the country, to and from France, Italy, and Germany. Besides the military establishment of the city of Basle, there were two provincial regiments, consisting each of ten companies, and a troop of dragoons. At present the country furnishes two regiments of militia, each consisting of nine companies of fusileers, a company of grenadiers, and one of dragoons. Manufacturing establishments are found in every corner, particularly for those of silk, cotton, ribbons and paper. The clergy form in the capital a convention, and in the country three chapters; over all these the first pastor of the cathedral presides. Basle was the first canton which separated from the Helvetic confederacy, and adopted the new constitution; and here, it is said, the first paper of modern times was manufactured.

Basle, or Bale, the capital of this canton, is the largest city in Switzerland, having upwards of 200 streets, and six market-places or squares. Its environs are exceedingly beautiful, consisting of a fine level tract of fields and meadows. The city is divided into two parts by the Rhine, over which there is a handsome bridge; the larger on the side of Switzerland, the lesser on that of Germany. It is thought by some to have risen on the ruins of the old Augusta Rauracorum. For its name it is indebted to Julian the Apostate, who named it in honor of his mother Basilina. The houses are well built, but thinly peopled, Basle containing at present only 15,000 inhabitants, whereas in former times the town was crowded to excess. A hereditary enmity subsists between the inhabitants of the two divisions. The minster, or cathedral church, the town-house, and the arsenal, are objects worthy of attention. The university, founded here in 1459, has an excellent library, a cabinet of medals, and botanic garden; the town has given birth to a number of eminent characters, particularly Œcolampadius, Grynæus, Buxtorf, Wetstein, Hermann, the Bernouillis, and Euler; Erasmus too resided here for many years, and lies interred in the cathedral. The commerce is extensive and flourishing, and is maintained chiefly by the manufacture of silk ribbons. The other manufactures of consequence are, silk stuffs, cotton, paper, linen, and gloves; there are also considerable bleachfields and dye-houses. The highest administrative power belongs to the large council of 280, out of which are chosen the members of the smaller council of 60. The Teutonic and Maltese orders have each a commander at Basle. It was remarked as a singularity in the clocks of this town, that they always struck an hour sooner than elsewhere; but this peculiarity no longer exists. Basle was formerly a city of the empire, and only ceased to be so on its joining the Swiss confederacy in 1501. Here was held a famous ecclesiastical council, between the years 1431 and 1444.

Basle was once the name of an independent bishopric, which had the Sundgau to the north, the canton of Basle to the east, that of Solothurn to the south, and Franche Comté to the west. The bishop was a prince of the empire, and had a seat and vote at the diet of the Upper Rhine. He was at the same time in alliance with the seven catholic cantons, but was never called to the meetings of the Swiss diet. His ordinary residence was at Porentrui. The whole bishopric contained, on 420 square miles, between 39,000 and 40,000 inhabitants. The nett revenue was valued at £20,000 sterling, to which the mines contributed between £3000 and £4000. In 1792 the French took possession of that part of the bishopric which belonged to the German empire, and formed it into a department of their republic, under the name of Mont Terrible, with which they soon after incorporated several of the other districts that were previously connected with Switzerland. After this it was included in the department of the Upper Rhine. In 1815 the bishopric of Basle, with the town and territory of Bienne, was united to the Swiss republic, by the congress of Vienna, and now forms part of the canton of Berne.

BASMAN, an island in the Persian gulf, five miles long, in the centre of which is a high hill. Lat. 25° 24′ N.

BASNAGE (Henry), Sieur de Beauval, second son to Henry Basnage, and brother to James. He was admitted advocate in the parliament of Rouen, in 1679. He did not follow the bar immediately upon his admission; but went to Valencia, where he studied under M. de Marville. Upon his return, he practised with great reputation till 1687, when the revocation of the edict of Nantz obliged him to fly to Holland, where he composed the greatest part of his works, and died in 1710. His chief work is Histoire des Ouvrages des Sçavans. Rotterd. 24 vols. in 12mo. This work was begun in September 1687, and continued till June 1709. When he arrived in Holland, Mr. Bayle, through indisposition, had been obliged to drop his Nouvelles de la Republique des Lettres, which induced Mr. Basnage to undertake a work of the same kind, under a different title.

BASNAGE (James), a learned author, and pastor of the Walloon church at the Hague, was born at Rouen in Normandy, in 1653. He was the son of Henry Basnage, one of the ablest advocates in the parliament of Normandy. At seventeen years of age, after he had made himself master of the Greek and Latin authors, as well as the English, Spanish, and Italian languages, he went to Geneva, where he began his divinity studies under Mestrezat, Turretin, and Tronchin; and finished them at Sedan, under the professors Jurieu and Le Blanc de Beaulieu. He then returned to Rouen, where he was received as minster, September 1676; in which capacity he remained till 1685, when, the exercise of the Protestant religion being suppressed at Rouen, he retired to Rotterdam, and was a minister pensionary there till 1691, when he was chosen pastor of the Walloon church of that city. In the year 1709 Pensionary Heinsius got him chosen one of the pastors of the Walloon church at the Hague, intending not only to employ him in religious but in state affairs. He was employed in a secret negociation with Marshal d'Uxelles, plenipotentiary of France at the congress of Utrecht; and he executed it with so much success, that he was afterwards entrusted with several important commissions, all which he discharged in such a manner as to gain a great character for his abilities and address; a celebrated modern writer has therefore said of him, that he was fitter to be a minister of state than of a parish. The abbe du Bois, who was at the Hague in 1716, as ambassador plenipotentiary from France, to negociate a defensive alliance between France, England, and the States General, was ordered by the duke of Orleans, regent of France, to apply himself to M. Basnage, and to follow his advice; they accordingly acted in concert, and the alliance was concluded in January 1717; and in return for his services he obtained the restoration of all his property in France. The catholics esteemed him no less than the protestants; and the works he wrote, which are mostly in French, spread his reputation almost all over Europe; among these are, 1. The history of the Religion of the Reformed Churches. 2. Jewish Antiquities. 3. The History of the Old and New Testament; and many others. He died Sept. 12, 1723.

BASNET (Edward), dean of St. Patrick's, Dublin. He was born in Denbighshire, in Wales, and was preferred to the dean of St. Patrick's about 1537. He was a zealous promoter of the Reformation, and in 1539, when the rebellion of O'Neal broke out, he laid aside the dress of the dean for that of the soldier, and joined the army under the lord deputy. For his good services he was made a privy counsellor, and besides other marks of royal favor, had the lands of Kiltearn, in the neighbourhood of Dublin, assigned to him by the crown. He died in the reign of Edward VI.

BASNETUM, low Lat. a helmet. *Bailey.*

BASON, bassin, Fr. See BASIN.

BASON, in anatomy, pelvis. 1. A round cavity in form of a tunnel, situate between the anterior ventricles of the brain, descending from its base, and ending in the point at the glandula pituitaria. It is formed of the pia mater, and receives the pituita, which comes from the brain, and passes through the pituitary gland, and thence into the veins. 2. That capacity is also called pelvis, or bason, which is formed by the ossa ilia and os sacrum, and contains the bladder of urine, the matrix, and the intestines.

Bason, in glass-grinding, or dish. Glass-grinders use various kinds of basons, of copper, iron, &c. and of various forms, some deeper, others shallower, according to the focus of the glasses that are to be ground. In these basons, convex glasses are formed, as concave ones are on spheres or bowls. Glasses are worked in basons two ways. In the first, the bason is fitted to the arbor, or tree of a lath, and the glass, fixed with cement to a handle of wood, is presented and held fast in the right hand within the bason, while the proper motion is given by the foot of the bason. In the other, the bason is fixed to a stand or block, and the glass with its wooden handle moved. The movable basons are very small, seldom exceeding five or six inches in diameter; the others are larger, sometimes above ten feet diameter. After the glass has been ground in the bason, it is brought smoother with grease and emery, polished with tripoli, and finished with paper cemented to the bottom of the bason.

Bason, in hat-making, a large round shell or case, ordinarily of iron, placed over a furnace; wherein the matter of the hat is moulded into form. The hatters have also basons for the brims of hats, usually of lead, having an aperture in the middle, of a diameter sufficient for the largest block to go through.

Bason, in hydraulics, a reservoir of water, as the bason of a jet d'eau, or fountain; the bason of a port or harbour, of a bath, &c. Basons are made with clay, cement, or lead; but the diameter must be made four feet longer on each side than the bason is to be. This will be taken up by the walls of clay. For the same reason, it must be dug two feet deeper than the intended depth of the water; because it is to be laid over eighteen inches thick with clay, and six inches with gravel and paving. The wall is to be made with shards, rubbish, or flints, with the natural earth for mortar; and the clay must be well worked, and trod firmly down with the naked feet. The way of making them with cement is, to allow one foot nine inches every way for the work; then cut the banks perpendicularly, and raise a wall of masonry a foot thick, made of pebble stones, or the like, laid in a mortar of lime and sand; the bottom is then to be covered to the same thickness; and then the solid lining of the cement is to be backed up against the walls, and over the bottom. This is to be made of small flints in beds of mortar, made of lime and cement. When this solid is eight inches thick, it must be plastered over the whole surface with cement, well sifted, before it be mixed with the lime; and with this it is to be wrought over smooth with a trowel. The proportion of this cement should be two-thirds of the cement, or powdered tile, to one-third of lime; and this cement has the property of hardening so under water, that it will become like stone or marble, and it will not be subject to decay for a long time. After the finishing, the bason should, for four or five days, be anointed over very often with oil, or bullock's blood, to keep it from flawing or cracking in the drying; and after this, the water should be let in as soon as may be. The leaded basons are made with walls a foot thick, and a bottom of half a foot. These must be of rubble stones cemented with plaster; for the lime will injure and eat the lead. The sheets of lead are to be spread over these walls and bottom, and seamed with solder. These basons, however, are but little in use now, from the expense of making them, and the danger of the lead being stolen. The waste pipes of fountains ought always to be made large enough for fear of choking. When the waste water is to be carried off in common sewers, it may be carried away in drains, or earthen pipes; but when it is to serve for basons that lie below it, it is to be conveyed in leaden ones.—There are divers sorts of basons; as

1. **Bason en Coquille**, that shaped like a shell.

2. **Bason, Figured**, that whose plane or circumference makes several turns and returns, either straight, circular, or the like. Such are most of the basons of fountains at Rome.

3. **Bason with a Balustrade**, that whose cavity is surrounded with a balustrade of stone, marble, brass, or the like.

4. **Bason with a Trench**, bassin a rigole, that whose border being of marble, or other stone, has a trench cut in it, whence, at certain distances, springs out a thread of water, which lines the trench, and forms a kind of nappe or gargle around the balustrade. Such is that of the fountain of the rock of the Belvidere at Rome.

Bason, in ship-building, a circular dock for the reception of ships.

Bason, Sale by the, at Amsterdam, is used for the public sales made under the direction of the vendu meester; so called, by reason that, before adjudging the lot or commodity to the last bidder, they strike a brass bason, to give notice of it.

Basons of a Balance, two pieces of brass, or other matter, fastened to the extremities of the strings; the one to hold the weight, the other the thing to be weighed.

BASOUDHA, a town of Hindostan, in the district of Bilsah.. Long. 78° 13′ E., lat. 23° 54′ N.

BASQUE Island, an island in the river St. Lawrence, near the coast of Lower Canada. Long. 68° 52′ W., lat. 48° 15′ N.

BASQUES Les, or French Biscay, a district of Gascony, France, which has the Bay of Biscay on the west, the river Adour and the Landes on the north, Bearn on the east, and the Pyrenees on the south. It was formerly subdivided into the three territories of Labour, Lower Navarre, and Soule, and is now included in the department of the Lower Pyrenees. It is very mountainous, and rather barren; it rears, however, a number of cattle. The inhabitants use a dialect which resembles that of the Spanish Biscayans, and is supposed to be a variety of the Celtic. The agility of the inhabitants is proverbial. It is not easy to imagine more grace and expression than they display in their motions, or the spirit and activity of their dances.

Basques, Rio de, a river in the province and government of Costa Rica, kingdom of Guatimala, which falls into the Atlantic.

BASQUEVILLE, or **Baqueville**, a town of France, in Lower Normandy, with 2190 inhabitants. Here are manufactures of serge, matrasses, nd woollen stuffs. It had the title of county efore the revolution, and is now the head of a anton, in the department of the Lower Seine, rrondissement of Dieppe. It is ten miles S.W. f Dieppe, and twenty-eight N. of Rouen.

BASRAH. See Bassora.

BASRODE, a town of the Netherlands, in Flanders, on the Scheldt, near Dendermonde. t contains 2150 inhabitants.

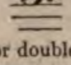
BASS, } This is the word from which **Ba'ssock.** } basket is supposed to be derived; ur gardeners even now call the soft sedge or ush with which they bind plants *bass*, which is he meaning of the word in the following citaion from Mortimer.

Having woollen yarn, *bass* mat, or such like, to ind them withal. *Mortimer's Husbandry.*

BASS, *n. s.*, in Cumberland, a river-fish, of he perch kind; in Hampshire, a sea perch.

Bass, in gardening, a soft kind of sedge or ush, used in binding plants, &c.

Bass, in geography, an insulated rock, about a mile in circumference, in the mouth of the Frith of Forth, at a small distance from the town of North Berwick, in East Lothian. It is steep and inaccessible on all sides, except on the S.W. and even there it is with great difficulty that a single man can climb up with the help of a rope or ladder. It was formerly kept as a garrison. A party of the adherents of James VII. surprised it at the revolution, and it was the last place in the three kingdoms that submitted to the new government; upon which its fortifications were ordered to be neglected. In ummer this remarkable rock, which rises to a reat height above the water, in form of a cone, quite covered with sea-fowl, which come hither breed. The chief of these are the solan geese, ee Bassanus), which arrive in June, and retire September. At that period these birds are so umerous that they almost darken the air; and e surface of the Bass is so covered with nests, ggs, and young, that it is difficult to walk ithout treading on them. The ruins of the old astle, which was once the state prison for Scotand, are situated at the north end of the preipice, which overhangs the sea in a tremendous anner. The Bass also contains a small warren for rabbits, and pasture for a few sheep. There is a beautiful spring of water in the centre, high on the rock. The force of the tides has now almost worn a hole through this rock. Long. 2° 15′ W., lat. 56° 3′ N.

Bass, in music, of uncertain etymology; whether from the Greek word βασις, a foundation; or from the Italian adjective basso, low; the lowest of the four parts of music, but the most important, as it is upon that the chords proper to constitute a particular harmony are determined. Hence the maxim among musicians, hat when the bass is properly formed, the harony can scarcely be bad. It is the part of the oncert which is the most heard, which consists f the gravest and longest sounds; or which is layed on the largest pipes or strings of a common instrument, or an instrument larger than ordinary, for the purpose. Musicians generally hold the bass the principal part of a concert, and the foundation of the composition; though others will have the treble the chief part. The late ingenious Dr. Franklin, in his very curious letter to Lord Kaimes on this subject, declares it to be his opinion that the bass is unnecessary to some tunes, and gives some reasons in support of it, which the curious may see there. Exper. Observ. &c. 4to. fifth edit. p. 489. Rousseau appears to have been of the same opinion. See Dict. de Musique, an. 1768.—Bass cliff, or F cliff, the character is marked thus 

Bass, Counter, is a second or double bass, where there are several in the same concert.

Bass Harbour, a harbour in the Eastern seas, formed by several small islands, off the coast of Malacca, forty-five miles W. of Queda.

Bass Island, an island in Lake Erie, four miles N. of Sundusky.

Bass River, a river of East Greenland, which runs into the sea. Long. 50° 10′ W., lat. 64° 30′ N.

Bass-Relief. Whatever figures or representations are cut, stamped, or otherwise wrought, so that not the entire body, but only part of it, is raised above the plane, are said to be done in relief, or relievo; and when that work is low, flat, and but little raised, it is called bass or low relief. When a piece of sculpture, a coin, or a medal, has its figure raised so as to be well distinguished, it is called bold, and we say its relief is strong. Bass-reliefs of the Trajan and Antonine columns have been copied by Bartoli, and explained by Bellori, &c. Those of the arch of Severus by Suaresius. Some have also made maps of prospects of countries in basso-relievo. Phil. Trans. No. 6, p. 99. See Basso Rilievo.

Bass, Thorough, is the harmony made by the bass-viols, or theorbos, continuing to play both while the voices sing and the other instruments perform their parts, and also filling up the intervals when any of the other parts stop. It is played by figures marked over the notes, on the organ, spinet, harpsichord, &c. and frequently simply and without figures on the bass-viol and bassoon.

Bass-viol, a musical instrument of the same form with that of a violin, but much larger. It is struck with a bow, as that is; has the same number of strings; and has eight stops, which are subdivided into semi-stops: its sound is grave, and has a much nobler effect in a concert than that of the violin.

Bass Strait, so called from the name of its discoverer, separates Van Diemen's Land from New Holland, and is not more than fifty leagues wide. It contains a chain of small islands, which run north and south. Van Diemen's land, which was hitherto supposed to be a part of New Holland, is thus ascertained to be a detached island; as, proceeding through this strait, Mr. Bass actually circumnavigated it. This discovery is not only interesting, as it establishes this geographical fact, but may be useful, as it expedites the passage from the Cape of Good Hope to Fort Jackson. See Van Diemen's Land.

BASSA. See Bashaw.

Bassa, or Grand Bassa, a country on the west coast of Africa, about 400 miles south of Sierra Leone, where the American colonization Society has obtained a grant of land from the king for a settlement. One of their agents describes the Bassas as living in small villages, or clusters of cottages, in each of which there is a head-man, who has a plurality of wives, and is the owner of all the people in his town. The inhabitants of each village cultivate the ground in common, which is chiefly done by the women and boys; the men employ themselves in fishing, hunting and trade, and in directing those under them. The adults wear a piece of narrow cloth about their loins; but the children are not burdened with any kind of clothing. They are very fond of beads and various other ornaments; and are represented as good-natured people, but extremely ignorant and superstitious, depending solely upon their gree-grees and devil worship, to whom they make daily sacrifices, and even dedicate a part of their regular food.

Bassac, a town of France, in the Angoumois, department of the Charente, arrondissement of Cognac, where was formerly an abbey. The number of inhabitants is about 1000. On the 13th of March, 1569, a battle was fought near this place between the Catholics and Protestants, in which the latter were defeated, and a prince of Condé was killed. It is on the right bank of the Charente, not far from Jarnac, and fifteen miles E. S. E. of Saintes.

BASSAD, or Besd, an Arabian name for the purple fucus of the Greeks, used by the women to paint their cheeks, and by the dyers of cloths. It has been misunderstood by late authors, and interpreted coral; but the error of this is evident, since coral has none of these properties. See Margian.

BASSAN (Giacomo de Pont), or le Bassan, a celebrated Venetian painter, born in 1510. His subjects generally were peasants and villagers, cattle, landscapes, and historical designs; the figures were well designed, and the animals and landscapes have an agreeable resemblance of simple nature. His compositions cannot boast of much elegance; but they have abundance of force and truth. His local colors are well observed, his carnations brilliant, and the chiaro-scuro and perspective well understood. His touch is free and spirited, and the distances in his landscapes are always true, but sometimes too dark in the nearer parts. His works are spread all over Europe: many of them were purchased by Titian; and there were several in the late French king's cabinet, the royal palace, and the Hotel de Toulouse. They are readily known from the similitude of characters and countenance in the figures and animals, &c., and particularly from a violet or purple tint that predominates in them all. But the genuine pictures of his own hand are not so easily ascertained; because his sons were mostly employed in copying the works of their father, which he sometimes retouched. As he lived to be very old, he finished a great number of pictures; yet from this circumstance his genuine pictures are not commonly met with. But the true pictures of Giacomo always bear a considerable price. He was also a lover of music and gardening, and used to intermingle among his plants figures of serpents, drawn so much to the life that his visitors were apt to mistake them for real ones. Hannibal Caracci himself, when he went to see him, was so far deceived by the figure of a bird upon the wall that he went to take it off the supposed shelf. He died in 1529.

Bassan (Leander and Francis), sons of Giacomo, inherited their father's genius for painting, and distinguished themselves in the art; but unfortunately they also inherited a species of lunacy from their mother, which shortened their lives and their usefulness.

BASSANI (Giovanni Battista), maestro di capella of the cathedral church of Bologna, about the middle of the last century, was a very voluminous composer of music, having published no fewer than thirty-one different works. He is equally celebrated as a composer for the church and for concerts; and being also a celebrated performer on the violin, he taught Corelli. His compositions consist of masses, psalms, motets with instrumental parts, and sonatas for violins: his fifth opera in particular, containing twelve sonatas for two violins and a bass, is much esteemed; it is written in a style wonderfully grave and pathetic. He was one of the first who composed motets for a single voice, with accompaniments of violins; a practice liable to objection, as it assimilates church-music too nearly to that of the chamber. Two of his operas, viz. the eighth and thirteenth, were printed in London, by Pearson, above fifty years ago, with the title of Harmonia Festiva.

BASSANO, a flourishing town of Italy, on the river Brenta, in the Venetian territory. It is scarcely one Italian mile in circuit, but has spacious suburbs, and contains, according to the last French enumeration, 11,500 inhabitants. A stone bridge, 182 feet in length, connects it with the large village of Vicantino. The neighbourhood is highly favorable to the cultivation of the vine and olive, and a good trade is carried on in silk, cloth, and leather. The extensive printing-office of Remontini issues a number of elegant publications. In the kingdom of Italy this town belonged to the department of the Tagliamento: Buonaparte erected it into a duchy, with £2,500 sterling annual revenue, which he conferred in 1809 on Maret, his minister for foreign affairs. It is twelve miles north of Vicenza, and twenty west of Treviso. Long. 11° 43′ E., lat. 45° 46′ N.

Bassano, or Bassanella, a small town in the Papal states, the head of a duchy, belonging to the house of Colonna. It gives name to the lake of Bassano, from which issues the river La Barca, the ancient Cremera. Here was born the celebrated Venetian printer, Aldus Manutius. Three miles west of Orta.

Bassano (St.), a small town of Italy, in the duchy of Milan, and district of Lodi.

BASSANUS, in ornithology, a species of Pelecanus, as large as a common goose, with a wedge-shaped tail; body white; bill and primary quill-feathers black; and face blue. Gmelin, Latham, &c.

This is the common gannet, or solan goose, a bird found in great plenty on all the northern coasts of Britain, but rather less common to the southward. The adult birds have the plumage nearly all white; but during the first years it is of a dusky color, and only speckled with white. The bill is bluish-ash color, about six inches in length, and has the nostrils placed in a furrow; the mouth within is black; the throat is bare; and the skin very dilatable, forming a pouch of sufficient size to contain five or six herrings; the legs are black, marked with a stripe of pea-green before; and the claw of the middle toe is pectinated. The males and females are very much alike in plumage. The gannet is particularly abundant in the isle of Ailsa in the firth of Clyde; the rocks adjacent to St. Kilda; the stalks of Souliskerry, near the Orkneys; the Skelig isles off the coasts of Kerry, Ireland; and the Bass island in the firth of Edinburgh. Dr. Hervey gives some account of the latter in these words. 'There is a small island, called by the Scotch Bass island, not more than a mile in circumference; the surface is almost wholly covered during the months of May and June with nests, eggs, and young birds; so that it is scarcely possible to walk without treading on them; and the flocks of birds in flight are so prodigious as to darken the air like clouds; and their noise is such that you cannot without difficulty hear your next neighbour's voice. If you look down upon the sea from the top of the precipice, you will see it on every side covered with infinite numbers of birds of different kinds, swimming and hunting for their prey; if in sailing round the island you survey the hanging cliffs, you see in every cragg or fissure of the broken rocks innumerable birds of various sorts and sizes, more than the stars of heaven when viewed in a serene night; if from afar you see the distant flocks either flying to or from the island, you would imagine them to be a vast swarm of bees.

'The gannet,' observes Dr. Latham, 'inhabits the colder parts of this kingdom, and more especially several of the northern isles, and in particular that of Bass in Scotland, whence the name. It generally first makes its appearance in March, and after making a circuit of the island, departs in October or November. This race seems to be in pursuit of the herrings and pilchards, whose motions it watches; and the fishermen know the coming of these fish by the appearance of the birds. That this is the inducement seems probable, as they are likewise seen, in the month of December, as far south as the coast of Lisbon and Gibraltar, plunging for sardinæ. The gannet is also common on the coasts of Norway and those of Iceland, and now and then met with on the southern coast of Greenland. In America it is found on the coasts of Newfoundland, where it breeds, migrating in winter as far as Carolina: said also to have been met with frequently in the southern ocean; but we are not clear whether the sort meant by them is the common gannet, or the lesser one.'

'The gannets,' Mr. Pennant remarks, 'are birds of passage. The first appearance in those islands being in March, and their continuance till August or September, according as the inhabitants take or leave their first egg; but in general the time of breeding and that of their departure seems to coincide with the arrival of the herring, and the migration of that fish, which is their principal food, out of those seas.' 'I have in the month of August,' he adds in another place, 'observed in Caithness their northern migrations. I have seen them passing the whole day in flocks, from five to fifteen in each. In calm weather they fly high, in storms they fly low and near the shore; but never cross over land, even when a bay with promontories intervenes, but follow at an equal distance the course of the bay, and regularly double every cape. I have seen many of the parties make a sort of halt for the sake of fishing; then, darting headlong into the sea, make the water foam and spring up with the violence of their descent: after which they pursued their route. I enquired whether they ever were observed to return southward in the spring, but was answered in the negative; so that it appears, they annually encircle the whole island.'

They are well known on most of our coasts by different names. In Cornwall and in Ireland they are called gannets, and by the Welsh gan. It comes on the coasts of Cornwall in the latter end of the summer or beginning of autumn, hovering over the shoals of pilchards that come up through the St. George's channel from the north sea. The gannet seldom comes near the land, but is constant to its prey; and when the pilchards retire, which happens about the end of November, they are seen no more.

The nest of the gannet is composed of various materials, such as grass and water plants, intermixed with any thing the birds find floating on the water. Each bird, if undisturbed, would lay only one egg in the year; but if that be taken away they will lay another, and if that be taken away also, they will lay a third, but no more. The young gannets, as well as the eggs, are eaten. Martin assures us, that the inhabitants of St. Kilda consume annually no less than 22,600 young birds of this species, besides an amazing quantity of their eggs; these being their principal support throughout the year: they preserve their eggs and fowls in pyramidal stone buildings, covering them with turf ashes to protect them from moisture. This is a dear-bought food, and earned at the hazard of their lives, either by climbing the most difficult and narrow paths, where to appearance they barely cling, and that too at an amazing height above the raging sea; or else, being lowered down from above, they collect their annual provision, thus hanging midway in the air, and placing their whole dependence on the uncertain footing of one person who holds the rope by which they are suspended at the top of the precipice. The young birds are a favorite dish with the north Britons in general, during the season they are constantly brought from the Bass isle to Edinburgh, and are roasted and served up a little before dinner as a whet: the price they are sold for in the markets is twenty-pence a piece.

The following account of the gannets in the isle of St. Kilda is given by Mr. Macauley:

'The rocks are in summer totally covered with the solan geese and other fowls, and appear at a distance like so many mountains covered with snow. The nests of the solan geese, not to mention those of other fowls, are so close, that when one walks between them, the hatching fowls on either side can always take hold of one's clothes; and they will often sit till they are attacked, rather than expose their eggs to the danger of being destroyed by the sea gulls: at the same time an equal number fly about, and furnish food for their mates that are employed in hatching; and there are, besides, large flocks of barren fowls of the different tribes that frequent the rocks of St. Kilda.

'The solan geese, almost equal the tame ones in size. The common amusement of the herring-fishers shows the great strength of this fowl. The fishers fix a herring upon a board, which has a small weight under it to sink it a little below the surface of the sea: the solan goose observing the fish, darts upon it perpendicularly, and with so much force, that he runs his bill irrecoverably through the board, and is taken up directly by the fishers.

'The solan geese repair to St. Kilda in the month of March, and continue there till after the beginning of November. Before the middle of that month they, and all the other sea-fowls that are fond of this coast, retire much about the same time into some other favorite regions; so that not a single fowl belonging to their element is to be seen about St. Kilda from the beginning of winter down to the middle of February. Before the young soland geese fly off, they are larger than their mothers, and the fat on their breast is sometimes three inches deep. Into what quarter of the world these tribes of wild fowl repair, after winter sets in, whether into the northern ocean, the native country and winter-quarters of herrings in general, or into some other region near the sun, or whether they be of the sleeping kind, they who pry into the mysteries of natural history, or have conversed much with writers of voyages, can best explain. I shall only pretend to say that these different nations of the feathered kind are taught to choose the most proper habitations and feeding places, and to shift their quarters seasonably by the unerring hand of God.

'From the account given above of the multitudes of sea-fowls that seek their food on this coast, we may justly conclude that there must be inexhaustible stores of fish there. Let us for a moment confine our attention to the consumption made by a single species of fowls. The solan goose is almost insatiably voracious; he flies with great force and velocity, toils all the day with little intermission, and digests his food in a very short time; he disdains to eat any thing worse than herring or mackerel, unless it be in a very hungry place, which he takes care to avoid or abandon. We shall take it for granted that there are a hundred thousand of that kind around the rocks of St. Kilda; and this calculation is by far too moderate, as no less than twenty thousand of this kind are destroyed every year, including the young ones. We shall suppose, at the same time, that the solan geese sojourn in these seas for about seven months in the year; that each of them destroys five herrings in a day, a subsistence infinitely poor for so greedy a creature, unless it were more than half supported at the expence of other fishes. Here we have 100,000,000 of the finest fish in the world devoured annually by a single species of the St. Kilda sea-fowls,' &c.

It is proper to observe that le grand fou of Brisson and Buffon, and great booby of Catesby, an inhabitant of the sea-shores of Florida, is supposed to be the young or at least a variety of pelecanus bassanus; and that observed by navigators so common on Ascension island, pelecanus piscator, a different species.

BASSATERRE. See Basse-Terre.

BASSEE, La, in geography, a town of France, in the department of the North, the ci-devant French Netherlands, remarkable on account of the many sieges it has sustained. It is seated on a canal which falls into the river Deule; eighteen miles south-west of Lille. Its principal commerce is in cattle, linen, and turf. Population about 2200.

Basse, in ichthyology, the English name of the sea-wolf, the lupus piscis of authors. The Greeks have called this labrax; and some of the later writers, as Paulus Jovius and others, spigola. It is properly a species of pearch, and is distinguished by Artedi by the name of the pearch with thirteen rays in the second fin of the back, and fourteen in the pinna auri. See Lupus, Marinus.

Basse, in writers of the middle age, a collar for cart-horses, made of flags. Hence also the round, matted cushion of flags, or hassock, used for kneeling in churches, is called basse; in Kent a trush.

Basse-cour, in building, a court separated from the principal one, and destined for the stables, coach-houses, and livery servants. In the country it is applied to the yard, or place where the cattle, fowls, &c. are kept.

Basse Enciente, or Basse Enclosure, in fortification, a false trench, made to hide a real one.

BASSEEN, a sea-port of Hindostan, the province of Aurungabad, separated from the island of Salsette by a narrow strait, in long. 72° 54′ E., lat. 19° 18′ N. The district around is in a very improved state of cultivation, although under a Mahratta government. Many of the cultivators are Roman Catholics. The Teak forests, which supply the marine yard at Bombay, lie along the western side of the Ghaut mountains, to the north and north-east of Basseen. In 1780 it was taken from the Mahrattas by the British, but restored in 1782. Distant 27 miles north of Bombay, and 152 south of Surat.

BASSEIN, or Persaim, a city in the south-west part of Pegu, where the British formerly had a factory; but the Burmans now prevent any European vessel from entering this branch of the river Irrawaddy. Long. 95° E., lat. 16° 50′ N.

BASSEN, or Bassum, a small town, castle and lordship of Germany, in the county of Hoya, in Westphalia, with a Lutheran abbey. It belongs to Hesse Cassel; but the abbey stands under the sovereignty of Hanover. Seven miles west of Hoya.

ES, a numerous cluster of islets, called
sand isles by Maurelle, off the north-west
New Guinea. The most south is in
° 27' E., lat. 1° 40' S.

ET, or Basette, a game at cards, said
been invented by a noble Venetian, for
was banished. It was first introduced
ice by Signior Giustiniani, ambassador of
n 1674. Severe laws were made against
is XIV., to elude which they disguised
der the name of pour et contre, that is,
against,' which occasioned new arrets
ibitions of parliament. The parties con-
it are a dealer or banker; his assistant,
rvises the losing cards; and the punter,
ne who plays against the banker. The
ms used in this game are: 1. The fasse
which is the first card turned up by the
elonging to the pack, by which he gains
value of the money laid down on every
at sort by the punters. 2. The couch,
noney which every punter puts on each
ch person that plays having a book of
several cards before him, on which he
his money, more or less, at discretion.
aroli, which is, when a punter having
first stake, and having a mind to pursue
fortune, crooks the corner of his card,
his prize lie, aiming at a sept et le va.
nasse; when having won the first stake,
er is willing to venture more money on
card. 5. The pay; when the punter
on the first stake, be it a shilling, half-
uinea, or whatever he laid down on his
l not caring to hazard the paroli, leaves
es the pay: in which case, if the card
wrong, he loses nothing, having won the
efore; whereas, if it turn right, he by
enture wins double the money staked.
lpiew; much the same with paroli, and
en a couch is won by turning up or
the corner of the winning card. 7.
le va, the first great chance or prize,
punter, having won the couch, makes
and goes on to second chance; so that
inning card turns up again, it comes to
va, which is seven times as much as he
n on his card. 8. Quinze et le va is the
er prize, when the punter, having won
er, is resolved to push his fortune, and
noney a second time on the same card
ing another corner; in which case, if it
p, he wins fifteen times the money laid
9. Trent et le va is the next higher
en the punter, crooking the fourth cor-
s winning card, if it turn up wins thirty-
es the money he first staked. 10. Soixant
the highest prize, and entitles the winner
seven times his first money; which, if it
siderable, stands a chance to break the
ut the bank stands many chances first of
the punter. This cannot be won but
ailleur's dealing the cards over again.
of the game of basset are as follows: 1.
ker holds a pack of fifty-two cards, and
huffled them, he turns the whole pack at
as to discover the last card; after which
down all the cards by couples. 2. The
punter has his book of thirteen cards in hi: hand, from the king to the ace; out of these he takes one card, or more, at pleasure, upon which he lays a stake. 3. The punter may, at his choice, either lay down his stake before the pack is turned, or immediately after it is turned, or after any number of couples are down. 4. Supposing the punter to lay down his stake after the pack is turned, and calling 1, 2, 3, 4, 5, &c. the places of those cards which follow the card in view, either immediately after the pack is turned, or after any number of couples are drawn. Then, 5. If the card upon which the punter has laid a stake comes out in any even place, except the first, he wins a stake equal to his own. 6. If the card upon which the punter has laid a stake comes out in any even place, except the second, he loses his stake. 7. If the card of the punter comes out in the first place, he neither wins nor loses, but takes his own stake again. 8. If the card of the punter comes out in the second place, he does not lose his whole stake, but only one-half; and this is the case in which the punter is said to be faced. 9. When the punter chooses to come in after any number of the couples are down, if his card happens to be but once in the pack and is the last of all, there is an exception from the general rule: for though it comes out in an odd place, which should entitle him to win a stake equal to his own, yet he neither wins nor loses from that circumstance, but takes back his own stake. This game has been the object of mathematical calculations. M. de Moivre solves this problem: to estimate at basset the loss of the punter under any circumstance of cards remaining in the stock when he lays his stake, and of any number of times that his card is repeated in the stock. From this solution he has formed a table, showing the several losses of the punter in whatsoever circumstances he may happen to be. From this table it appears, 1. The fewer the cards are in the stock, the greater is the loss of the punter. 2. That the least loss of the punter, under the same circumstances of cards remaining in the stock, is when his card is but twice in it; the next greater when but three times; still greater when four times; and the greatest when but once. The gain of the banker upon all the money adventured at basset is 15*s.* 3*d.* per cent.

Basset (Peter), a gentleman of a good family, was chamberlain, or gentleman of the privy-chamber, to Henry V. a constant attendant on that brave prince, and an eye-witness of his most glorious actions at home and abroad; all which he particularly described in a work entitled, The Acts of King Henry V. which remains in MS. in the college of heralds.

BASSE-TERRE, the chief town of St. Christopher's, in the West Indies, situated at the south-east end of the island, and at the mouth of a river opening into a bay called Basse-Terre road. It consists of a long street, containing 800 houses is a place of considerable trade, and defended by three batteries. Long. 62° 36' W., lat. 17° 24' N.

Basse Terre, Fort de la, a castle of the island of Guadaloupe, on the west coast. It is also the name of a part of the island, between a point of which, called Grosse Morne, to that of

Antigua in the Grande Terre, the basin called the Great Cul de Sac is five or six leagues in length, and affords safe riding for ships.

BASSETING, in the coal mines, denotes the rise of the vein of coal towards the surface of the earth, till it comes within two or three feet of the surface itself. This is also called by the workmen cropping; and stands opposed to dipping, which is the descent of the vein to such a depth that it is rarely, if ever followed to the end.

BASSETTO, a bass viol of the smallest size.

BASSEVILLE (Citizen), secretary to the French legation at Rome, one of the many victims to the French revolution, but who fell, not by the hands of the zealots of liberty, but by the dæmons of despotism and priestcraft, in March 1793. Having received orders from the Convention to put up the arms of the republic over the consular house, instead of those of the ci-devant royalty, the popular furor was excited; and, though Basseville himself, being a man of moderate principles, was against the measure, the blind zealots of superstition stabbed him in the belly with a razor, in the house of Moutte the banker, which they afterwards plundered and burnt, calling out 'Long live the pope!—Long live religion!' &c. Basseville died in thirty-six hours; and the convention decreed a pension to his widow, with reversion to his child, whom they also decreed to be educated at the public expense.

BASSI (Laura), a celebrated Italian lady, of the eighteenth century. She received a liberal education, not only in the branches considered as belonging to her sex, but in the languages and sciences; and such was her progress in learning, that in 1732, she got the title of Doctor of Philosophy. In 1745 she read lectures on experimental philosophy, and continued to do so during her life. She married Dr. Verati, and preserved an excellent character, as the practiser of every virtue. She died in 1778.

BASSIA, a genus of the monogynia order, belonging to the dodecandria class of plants, the characters of which are: The CAL. is quadriphyllous; the COR. octofid, with the tube inflated; the STAM. are fifteen; and the drupe is quinquespermous. There is but one species, viz. B. longifolia, native of Malabar.

BASSIGNY, a district of France, belonging, before the revolution, to Upper Champagne, and the duchy of Bar. At present it is included in the department of the Upper Marne, with the exception of some small portions which are in the departments of the Vosges and Maese. There is in it a small town of the same name, but the chief places are Chaumont and Vaucouleurs.

BASSINGTHWATE, or BASSENTHWAITE, WATER, a lake in Cumberland, four miles long, and one broad, having on one side the vale of Bassingthwate and the lofty Skiddaw, and on the other the steep woody mountains of Withop.

BASSO, in music, generally signifies the bass, but sometimes in pieces of music for several voices, the singing bass is more particularly so called. Thus also,

BASSO CONCERTANTE, or RECITANTE, implies the bass of the little chorus, which plays throughout the whole piece.

BASSO CONTINUO, the continual or thorough bass, distinguished with figures over the notes, for the organ, harpsicord, or theorbo. It originally meant the accompaniment to the higher parts of a sonata, &c. in whatever cliff it was written.

BASSO RILIÉVO. Italian. In sculpture, a modern term for that kind of sculpture in which the figures do not stand out from the ground in their full proportion. The term belongs exclusively to later times. Pliny (xxxiii. 11.) applies the word αναγλυπτα to workmanship of this kind; but it is a term by no means so distinctive as the Italian basso-rilievo. All works in sculpture are classed as bassi rilievi when the subjects represented are not isolated, but adherent to the ground, whether they are of a similar or different material, and applied or fixed to the ground, or form a part of the material in which they are wrought. There are three sorts of relief in sculpture, alto rilievo, mezzo rilievo, and basso rilievo. Strictly taken, alto rilievo is that relief in which the figures are entire, or nearly so, being attached only in a few places, and are relieved from the ground like the metopes of the Parthenon; mezzo rilievo is that in which half the figure stands clear from the ground, and the other appears buried therein; and basso rilievo that in which the figures lose their projecture, and are represented as nearly flat, like the Panathenæic procession of the same temple. Custom, however, has nearly abolished two of these terms; and basso rilievo is often applied to each sort, be the projections what they may.

The true basso rilievo, which has but small projection, requires more skill in the sculptor than that in which the projection is more considerable; because it is extremely difficult to give a natural effect to a figure which is of its proper height and size, but falls short of its real thickness. What is more difficult even than this, in the style of sculpture now under consideration, is picturesque composition in grouping the figures, because the artist cannot, as in painting, employ different backgrounds remote from each other; and as the shadows in sculpture are real, and not imitative, he must calculate his composition, and arrange its form for the light in which it is to be placed.

The ancients used bassi rilievi in decorating architectural designs, and in ornamenting their domestic furniture. All nations, however, in the history of the arts have used them, and they resemble in style that of their other works. The Egyptians ornamented their temples with an innumerable quantity of figures and hieroglyphics, of which the greater part have the outlines only sunk, and the area thus formed only painted; but many of them are of the class bassi rilievi. (See Denon's Travels in Egypt, Captain Norden, and Dr. Pococke; also the Egyptian sculptures in the British Museum, those brought to Europe by Belzoni, &c.) Their manner of executing these sculptures is singular: they first channelled an outline in the stone, and sunk it round the figure, so that it did not project beyond the original face; being in fact more a specimen of engraving than sculpture. The cabinet of the royal library at Paris possesses a very curious Egyptian sculpture thus wrought, and many of the same description are found in Egypt, principally on the frontispieces of the temples where the Scarabeus extends his reign. The Persians were also partial to the use of bassi rilievi, as in the walls of Tschelminar, the ancient Persepolis. (See PERSEPOLIS.) They are executed in very high relief.

The Etruscans also used bassi rilievi; but Winckelman errs in attributing to this people all those works in which the figures are clothed in draperies, with straight square folds, designed in a stiff formal style like the antique altar of the Cardinal Albani, on which is represented their twelve principal gods. On the contrary, every well informed archaiologist allows these and other similar monuments of art to belong to the very earliest period of the Greeks. Some bassi rilievi of clay, painted in water colors, found near the country of the Volscii, which are preserved in the cabinet of Cardinal Borgia, and published under his patronage, prove, beyond a doubt, that the Etruscans, like the Greeks, often painted their sculptural figures.

The bassi rilievi used by the ancients were often formed of baked clay: sometimes of ivory and various metals, but oftener of marble.

Among the most celebrated Greek bassi rilievi of antiquity are those which Phidias carved in ivory, upon the shield and the base of the statue of Minerva at Athens. Those which ornamented the throne of Jupiter Olympus, executed by Alcamenes; those of Apollo, at Amyclæ, in Laconia; the bassi rilievi of the temple of Hercules, at Thebes, executed by Praxiteles; those of the temple of Delphos, the joint work of Praxias and Androsthenes; the celebrated funeral monument of Mausolus, called the mausoleum, executed by Scopas, Bryaxis, Timotheus, and Leochares; the thirty-six columns of the temple of Diana, at Ephesus, &c.

The sculptures in the metopes and pediments of the parthenon at Athens, which were entire in the time of Spon, who has described them, are in alto rilievo, like statues affixed to a back ground of marble. Their great size and height preserved them from those accidents to which they would have been liable in a lower situation, and to which, on the same account, they gave a less projection. Many of these invaluable relics of the brightest days of Grecian art, were brought to England by Lord Elgin, and are preserved in the British Museum.

As the greater part of the antique bassi rilievi, now remaining, are executed in marble, they form the principal criterion by which we can judge of the excellency of their sculptors. Many of the best preserved were used to ornament their altars, as is seen in those which are in the museum capitolinum. One of these represents the education of Jupiter, and the others the labors of Hercules. They were also used as decorations to the bases of statues, and oftener to their tombs; and even sometimes to the pedestals or stones on the margin of wells, as may be seen on one belonging to the last-named museum, representing the education of Achilles; and a beautiful one of nymphs and fawns, in the British Museum.

The Romans made use of bassi rilievi to commemorate victories and embellish columns, triumphal arches, &c. But the greater number now preserved were attached to sarcophagi. The custom of burning their dead had fallen into disuse, partly from a scarcity of fuel, and partly because they had acquired many of the religious opinions of the eastern nations, from whom they adopted the mode of occasionally interring the bodies of their dead in coffins of marble, and other valuable materials. Their numbers at length became immense, both in the city and in the environs of Rome, if we may judge only from those which are to be found in the cabinets of the curious. The bassi rilievi, with which these sarcophagi are ornamented, are usually wrought with little care, and by sculptors of minor talents; but they preserve to us many of the finest compositions of their greatest artists, which were the admiration of antiquity. In many of the Greek bassi rilievi, the face of the deceased only is finished, and many antiquaries, from this circumstance, have conjectured that it was a sort of manufacture in Greece, to make sarcophagi for the Romans, and that they were to be finished after they were sold. The bad style of these sculptures is no reason for supposing that these marbles were not carved in Greece, because in the time of the emperors, the best Grecian artists were removed to Rome, and those of meaner talents remained at home. From the great quantity of marble that Attica, and indeed all Greece, possessed, it is natural to suppose that those sculptors who remained behind in their country would execute bassi rilievi for sarcophagi, when so ready a sale was found for them at Rome. Many archaiologists have supposed that the greater part of the compositions which are found on these sarcophagi, were copied from the great masters, of which the originals (as the paintings of Panænus and Polignotus in the Poekile, &c.) perished, when the cities of Greece were pillaged and ransacked.

The study of the ancient bassi rilievi is of great service in the history of the arts; as from them may be collected many important facts of the mythology, customs, costume, &c. of the ancients. The finest collections of bassi rilievi now existing, are those of the British Museum, formerly the Townly collection; the Elgin marbles in the same museum; the collections of Mr. Thomas Hope, and Mr. Soane, the professor of architecture in the Royal Academy of London; and several fine casts in the Royal Academy. In Paris they had some fine antique bassi rilievi in the Royal Museum; in the museum of the Augustins; and many private collections. The application of bassi rilievi among the moderns is the same as among the ancients; being used to decorate public buildings, palaces, churches, triumphal arches, theatres, concert rooms, and private houses; furniture, tombs, and other subjects of ornamental architecture. The most celebrated specimens of bassi rilievi (properly so called) of modern art in England, are those of the tympanum of the pediment of the East India house, by Bacon; the monument of Captain Millar in a pannel of St. Paul's cathedral, by Flaxman. Several others on the public monuments, erected in that cathedral, and in Westminster abbey, by Bacon, Banks, Bacon, jun. Rossi, Chantrey, Kendrick.

Hopper, and Westmacott. And on the continent, most of the sculptures are thus decorated, and embrace the names of the most celebrated artists. The French critics particularly admire the bassi rilievi on the Porte St. Denys, begun by Girardon, and finished by Michel Anguiere, and those on the Fountain of the Innocents, called the Nymph's Fountain, by the celebrated Jean Goujon.

Basso Ripieno, the bass of the ground chorus, or that which plays only in particular places.

Basso Violino, the bass for the bass viol.

BASSOON, *bas son*, Fr. low sound; an instrument which forms the natural base to the hauthois. It is played like that instrument, with a reed, and forms a continuation of its scale downwards. The reed is fixed to a crooked mouth-piece issuing from the side of the bassoon. Three keys communicate to the ventages which otherwise are too remote for fingering. The Italian name fagotto is derived from its appearance; it consists of four tubes bound together so as somewhat to resemble a fagot. Its compass is three octaves, from double AA in the base, to *a* in the second space of the treble.

BASSORA, Balsora, Bossora, or Basra, a city between Arabia and Persia, situated in the extremity of the deserts of Irak, a little west of the Tigris, where it is navigable for vessels of 500 tons, and not far from its junction with the Euphrates. It was built by the khaliff Omar, in the fifth year of the Hegira, for the sake of carrying on more commodiously an extensive commerce between the Syrians, Arabians, Persians, and India. It is at present a famous emporium of Eastern commerce, and stands upon a thick stony soil, as the name imports. That mouth of the Tigris which empties itself into the Persian Gulf after passing the town, is called from it, the Bay of Bassora. The circumjacent country is regarded by the Arabs as one of the most delightful spots in Asia, and is certainly one of the most beautiful tracts in the world; however, the hot winds that frequently blow here are very troublesome to travellers, and sometimes overwhelm them with sand. The city is inhabited by Nestorians, Jews, Mahommedans, and Chaldean Christians, or Christians of St. John, which last are pretty numerous. The walls are about seven miles in circuit, and twenty-five feet thick. The city is entered by five gates; but much of this space is occupied by plantations and gardens, interspersed with canals, which are cleansed by the tide flowing into them twice every day, to the height of nine or ten feet. The city is indifferently built; the houses very mean, and constructed chiefly of clay; the streets are irregular, and notwithstanding the advantage of the canals, are kept in a filthy state. Even the bazaars, though containing the richest products of the East, are but miserable edifices. The English factory is the best building in the city. The abbe Raynal describes its trade as consisting of rice, sugar, plain striped and flowered muslins from Bengal, spices from Ceylon and the Molucca islands, coarse white and blue cottons, from Coromandel, cardamum, pepper, sanders-wood, from Malabar, gold and silver stuffs, turbans, shawls, indigo, from Surat, pearls from Baharin, and coffee from Mocha, iron, lead, and woollen cloth, from Europe. Some of these commodities are shipped on board small Arabian vessels; but the greater part is brought by European vessels. Yet all European commodities are dear here; a decided preference is given to articles of English manufacture, especially broad cloth and watches. Many of the products of other countries are re-exported, and an extensive traffic is carried on in horses, which, being very strong and beautiful, are exported by the English. Its population was estimated by Mr. Parsons, who was here in 1775, at 200,000; but it is now thought not to exceed 60,000; but it is still the second city of the pachalic of Bagdad. It fell into the hands of the Turks, (who took it from the Persians) in 1688; was re-taken by Persia in 1777, but resigned to the Turkish army the following year. The Arabs expelled the Turks in 1787, but the latter, under Soliman Pacha of Bagdad, regained it shortly after, and have held it ever since. It is distant from Ispahan 210 miles south, 903 from Alexandretta, and 1815 south-east from Constantinople. Long. 44° 46′ E., lat. 30° 32′ N.

BASSOVIA, in botany, a genus of plants of the class pentandria, and order monogynia. Its generic characters are, cal. perianth one-leaved: cor. one-petalled: stam. filaments five; anthers ovate: pist. germ ovate; style short; stigma thickish: per. berry ovate; seeds very many.—The only species is the B. sylvatica, a perennial, native of Guiana.

BASS Viol. See Bass.

BASSUM, a district in the province of Nandere, in the Nizam's dominions, Hindostan. It has an uneven hilly surface, intersected by several small streams, which flows into the Godavery; and it lies between the twenty-first and twenty-second degrees of north latitude. The chief town is Bassan, which is situated six miles from the Gunga. Very little is known respecting this part of Nandere.

BAST, lime tree bark made into ropes or mats.

BASTAGA, from *βαϛαζειν*, portare, to carry, the office of carriage or conveyance.

BASTAGARII, in ecclesiastical antiquity, those who carry the images of saints at processions.

BA'STARD, *v. n.* & *adj.* } *Bastardd*, Welch,
Ba'stardize, } *bastarde*, Fr. of low
Ba'stardly, } birth, from base,
Ba'stardy. } and ord, A. S., the

one signifies mean, disgraceful; and the other source and origin; thus *bastard* means base-born. It is also applied to any thing not proceeding from a legitimate source; to whatever is spurious or mixed. In the earlier writers it is not uncommon to meet with *bast* without the termination *ard*.

> When he was aryued, he sent to Harald,
> And said that a *bastard* no kyngdom suld hald.
>
> *R. Brune.*

> And so shee (queen Anne) putting in oblivion the *bastardyng* of her daughter, deliuered into king Richard's hands her five daughters, as lambes once again committed to the custodie of the rauenous woolfe. *Grafton. Richard III.*

er this he (Sir H. Bolyngbrooke) hadde of he after were made legyttymat, by dame e Swynforde iii sonnys.
Fabyan. Ann. 1386. R. 2.

hou shalt find the catalogue enroll'd
sdeeds, there shall be writ in text,
rding the issues of a prince.
Ford's Love's Sacrifice.

is a very apoplexy, lethargy, insensible, a nore *bastard* children than war's a destroyer
Shakspeare.

d have been what I am, had the maiden- in the firmament twinkled on my *bastard-*
Id.

he slandered me with *bastardy*;
her I be true begot or no,
I lay upon my mother's head. *Id.*

Words
d in your tongue; *bastards* and syllables
wance to your bosom's truth. *Id.*

pint of *bastard*.—
r brown *bastard* is your only drink. *Id.*

We are *bastards* all;
most venerable man, which I
ny father, was I know not where
was stampt; some coiner with his tools
a counterfeit: yet my mother seem'd
of that time: so doth my wife
areil of this. *Donne.*

eed degenerates, and oft obeys
disease, and into cockle strays;
nind's thoughts but be transplanted so
body, and *bastardly* they grow. *Id.*

ved to see her brother beheaded, and her deposed from the crown, *bastarded* in their d cruelly murdered. *Bacon.*

He
t kills himself t' avoid misery, fears it,
at the best shows but a *bastard* valour.
Massinger.

passions, as I have already proved, love is ent, and of those bitter potions which this ancholy affords, this *bastard* jealousie is the as appears by those prodigious symptoms hath, and that it produceth.
Burton's Anatomy of Melancholy.

pect of the evil consequents, the wife's adul- orse, as bringing *bastardy* into a family.
Taylor.

im to the Lydian king Lycimnia bare,
sent her boasted *bastard* to the war.
Dryden.

who, under the disguise of publick good, pur- r own designs of power, and such *bastard* as attend them. *Temple.*

ore of simony beneath black gowns,
ore of *bastardy* in heirs to crowns. *Pope.*

ard, by our English laws, is one that is not otten, but born, out of lawful matrimony.
Blackstone's Commentaries.

And these are men, forsooth!
nd chiefs, the flower of Adam's *bastards*.
Byron.

ARDS; in the English law. The cele- Blackstone observes in his Commentaries difference between our common and the d canon law. The civil and canon laws allow the child to remain a bastard, if the afterwards intermarry: and herein they most materially from our law; which, not so strict as to require that the child be begotten, yet makes it an indispensible on that it should be born after lawful wedlock. And the reason of our law, he continues, is surely much superior to that of the Roman, if we consider the principal end and design of establishing the contract of marriage, taken in a civil light, abstractedly from any religious view; which has nothing to do with the legitimacy or illegitimacy of the children. The main end and design of marriage, being to ascertain and fix upon some certain person, to whom the care, the protection, the maintenance, and the education of the children, should belong: 1. Because of the very great uncertainty there will generally be, in the proof that the issue was really begotten by the same man; whereas, by confining the proof to the birth, and not to the begetting, our law has rendered it perfectly certain what child is legitimate, and who is to take care of the child. 2. Because by the Roman law a child may be continued a bastard, or made legitimate at the option of the father or mother, by a marriage ex post facto; thereby opening a door to many frauds and partialities, which by our law are prevented. 3. Because by those laws a man may remain a bastard till forty years of age, and then become legitimate by the subsequent marriage of his parents; whereby the main end of marriage, the protection of infants, is totally frustrated. 4. Because this rule of the Roman law admits of no limitation as to the time, or number, of bastards to be so legitimated; but a dozen of them may, twenty years after their birth, by the subsequent marriage of their parents, be admitted to all the privileges of legitimate children. This is plainly a great discouragement to the matrimonial state; to which one main inducement is usually not only the desire of having children, but also the desire of procreating lawful heirs. Whereas our constitution guards against this indecency, and at the same time gives sufficient allowance to the frailties of human nature.

By the law of Scotland, following the canon law, bastards may be legitimated, or made lawful, 1. By the subsequent intermarriage of the mother of the child with the father; and this legitimation entitles the child to all the rights of lawful children. The subsequent marriage, which produces legitimation, is considered by the law to have been entered into when the child legitimated was begotten; and hence, if he be a male, he excludes, by his right of primogeniture, the sons procreated after the marriage, from the succession of the father's heritage, though these sons were lawful children from the birth. Hence, also, those children only can be thus legitimated, who are begotten of a woman whom the father might at that period have lawfully married. 2. Bastards are legitimated by letters of legitimation from the sovereign

A bastard, as such, is excluded by the Scottish law. 1. From his father's succession; because law knows no father who is not marked out by marriage. 2. From all heritable succession, whether by the father or mother; because he cannot be pronounced lawful heir by the inquest, in terms of the brief. And, 3. From the movable succession of his mother; for though the mother be known, the bastard is not her lawful child, and legitimacy is implied in all succession conferred by law. Yet a bastard, though he cannot succeed jure sanguinis, may succeed by destination, where he is specially called to the succession by an entail or testament.

Every attempt to introduce the civil law, in this respect, into England, by declaring children legitimated by a subsequent marriage, has been steadily rejected. It was upon an occasion of this kind, that the barons of England, assembled in the parliament of Merton, A. D. 1272, made that famous answer, 'Nolumus leges Angliæ mutare.' 20 Hen. III. cap. 9.

From what has been said it appears, that all children born before matrimony are bastards by our law: and so it is of all children born so long after the death of the husband, that, by the usual course of gestation, they could not be begotten by him. But this being a matter of some uncertainty, the law is not exact as to a few days. But if a man dies, and his widow soon after marries again, and a child is born within such a time as that by the course of nature it might have been the child of either husband: in this case, he is said to be more than ordinarily legitimate; for he may, when he arrives at the years of discretion, choose which of the fathers he pleases. To prevent this, among other inconveniences, the civil law ordained that no widow should marry infra annum luctus; a rule which obtained so early as the reign of Augustus, if not of Romulus: and the same constitution was probably handed down to our early ancestors from the Romans, during their stay in this island: for we find it established under the Saxon and Danish governments.

As bastards may be born before the coverture of marriage-state is begun, or after it is determined, so also children born during wedlock may in some circumstances be bastards. As if the husband be out of the kingdom of England, or as the law loosely phrases it, extra quatuor maria, for above nine months, so that no access to his wife can be presumed, her issue during that period shall be bastards. But generally during coverture, access of the husband shall be presumed, unless the contrary shall be shown; which is such a negative as can only be proved by showing him, to be elsewhere; for the general rule is præsumitur pro legitimatione. But modern decisions have considerably narrowed this rule. It is now held that the husband's being within the four seas is not conclusive evidence of the legitimacy of the child, and it is left to a jury to determine whether the husband had access or not. 3 P. W. 275, 276. 2 Str. 925. And evidence may be given, that the husband was from natural or incidental causes impotent. 2 Stra. 940. 1 Roll. Abr. 358. 1 Salk. 123. But in this latter case an impossibility must be proved, and not a bare improbability. In a divorce, a mensa et thoro if the wife breeds children they are bastards; for the law will presume the husband and wife conformable to the sentence of separation, unless access be proved; but in a voluntary separation by agreement, the law will suppose access, unless the negative be shown. So also if there be an apparent impossibility of procreation on the part of the husband, as if he be only eight years old, or the like, there the issue of the wife shall be bastards. Likewise, in case of divorce in the spiritual court a vinculo matrimonii, all the issue born during the coverture are bastards; because such divorce is always upon some cause that rendered the marriage unlawful and null from the beginning.

As to the rights and incapacities which appertain to a bastard: the former are very few, being only such as he can acquire; for he can inherit nothing, being looked upon as the son of nobody, and sometimes called filiusnullius, sometimes filius populi. Yet he may gain a surname by reputation, though he has none by inheritance. All other children have their primary settlement in their father's parish: but a bastard in the parish where born, for he hath no father. However, in case of fraud, as if a woman be either sent by order of justices, or comes to beg as a vagrant, to a parish which she does not belong to, the bastard shall, in the first case, be settled in the parish from whence she was illegally removed; or in the latter case, in the mother's own parish, if the mother be apprehended for her vagrancy. Bastards also born in any licensed hospital for pregnant women, are settled in the parishes in which the mothers belong. The incapacity of a bastard consists principally in this, that he cannot be heir to any one; for being nullius filius, he is therefore of kin to nobody, and has no ancestors from whom any inheritable blood can be derived. Therefore, if there be no other claimant upon an inheritance than such illegitimate child, it shall escheat to the lord. And as bastards cannot be heirs themselves, so neither can they have any heirs but those of their own bodies. For as all collateral kindred consists in being derived from the same common ancestor, and as a bastard has no legal ancestors, he can have no collateral kindred; and consequently can have no legal heirs, but such as claim by a lineal descent from himself. And therefore, if a bastard purchases land, and dies seised thereof without issue, and intestate, the land shall escheat to the lord of the see. A bastard was also, in strictness, incapable of holy orders; and though that were dispensed with, yet he was utterly disqualified from holding any dignity in the church; but this doctrine seems now obsolete; and in all other respects there is no distinction between a bastard and another man. And really any other distinction but that of not inheriting, which civil policy renders necessary, would, with regard to the innocent offspring of his parent's crimes, be odious, unjust, and cruel, to the last degree; and yet the civil law, so boasted of for its equitable decisions, made bastards in some cases incapable even of a gift from their parents. A bastard may, lastly, be made legitimate and capable of inheriting by the transcendant power of an act of parliament, and not otherwise: as was done in the case of John of Gaunt's bastard children, by a statute of Richard II.

The principal duty of parents to bastard children, by the English law, is that of maintenance. For though bastards are not looked upon as children to any civil purposes; yet the ties of nature, of which maintenance is one, are not so easily dissolved; and they hold indeed as to some other intentions; as particularly that a man shall not marry his bastard sister or daughter, &c. The

in which the English law provides main-
for them is as follows: When a woman
ered, or declares herself with child, of a
and will by oath before a justice of the
arge any person with having got her with
e justice shall cause such person to be ap-
ed, and commit him till he gives security,
maintain the child, or appear at the next
sessions to dispute and try the fact. But
oman dies, or is married, before delivery,
arries, or proves not to have been with
e person shall be discharged; otherwise
ions, or two justices out of the sessions,
iginal application to them, may take or-
the keeping of the bastard, by the charg-
e mother or the reputed father with the
t of money or other sustentation for that
. And if such putative father, or lewd
run away from the parish, the overseers
tion of two justices may seize their rent,
nd chattels, in order to bring up the said
child. Yet such is the humanity of our
at no woman can be compulsively ques-
oncerning the father of her child till one
fter her delivery; which indulgence is,
, very frequently a hardship upon pa-
y giving the parents opportunity to escape.
he stat. 18 Eliz. c. 3, two justices may
ler for the punishment of the mother and
father; but what that punishment shall
ot therein ascertained: though the con-
ry exposition was, that a corporeal pu-
t was intended. By stat. 7 Jac. I. c. 4.
fic punishment, viz. commitment to the
f correction, is inflicted on the woman
But in both cases, it seems that the pe-
n only be inflicted if the bastard becomes
ble to the parish; for otherwise the very
ance of the child is considered as a de-
punishment. By the last mentioned sta-
justice may commit the mother to the
f correction, there to be punished and
ork for one year; and in case of a second
till she find surety never to offend again.
enacted by statute 21 Jac. I. c. 27. that
oman be delivered of a child, which if
ive, should by law be a bastard, and en-
s privately to conceal its death, by bury-
child or the like; the mother so offending
ffer death, as in the case of murder, un-
can prove by one witness at least that
d was actually born dead. This law is
et with also in the criminal codes of
her nations of Europe; as the Danes, the
, &c. but it has been repealed by 43
I. c. 58. called Lord Ellenborough's act,
can only be convicted of murder in this
proof of the child being actually born
but in all cases when a child would
en a bastard, are punishable for conceal-
birth, whether the child be born alive or
se, by imprisonment for two years.

ARDS, in history, a troop of banditti who
Guienne about the beginning of the
th century, and joining with some English
ravaged the country, and set fire to the
Saintes. Mezeray supposes them to have
d of the natural sons of the nobility of
e, who being excluded the right of inheriting from their fathers, put themselves at the head of robbers and plunderers to maintain themselves.

Bastards, in the sea language, large sails of a galley, which will make way with a slack wind.

Bastard Cedar Tree, called guazuma in the West Indies.

Bastard Flower Pence. See **Adenanthera.** The flowers of this plant bruised and steeped in breast milk are a gentle anodyne, for which purpose they are often given in the West Indies to quiet very young children. The leaves are used in Barbadoes and the Leeward islands. In Jamaica the plant is called Sena.

Bastard Hemp. See **Datisca**

Bastard Rocket. See **Resed** .

Bastard Scarlet is a name given to red dyed with bale-madder, as coming nearest the bow-dye, or new scarlet.

Bastard Star of Bethlehem. See **Albuca.**

BASTARDY, according to Eustathius, was held among the Greeks as honorable as legitimacy, down even to the time of the Trojan war; but the course of antiquity seems against him. The ancient Greeks indeed, appear to have been proud of their reputed descent from the gods, but Potter and others show that there never was a time when bastardy was not a disgrace. In the time of our William the Conqueror, however, it seems not to have implied any reproach, that monarch himself not scrupling to assume the appellation of bastard. His epistle to Alan, count of Bretagne begins, Ego Willielmus, cognomento bastardus.

Bastardy, in relation to its trial in law, is distinguished into general and special.

Bastardy General, is a certificate from the bishop of the diocese, to the king's justices, after inquiry made, whether the party is a bastard or not, upon some question of inheritance.

Bastardy Special, is a suit commenced in the king's courts, against a person that calls another a bastard.

Bastardy, Arms of, should be crossed with a bar, fillet, or traverse, from the left to the right. They were not formerly allowed to carry the arms of their father, and therefore they invented arms for themselves; and this is still done by the natural sons of a king.

BASTARNÆ, or **Basternæ**, a people of German original, manners, and language, who extended themselves a great way to the east of the Vistula, the east boundary of Germany among the Sarmatæ, as far as the mouth of the Ister and the Euxine, and were divided into several nations.

BASTARNICÆ Alps, in ancient geography, mountains extending between Poland, Hungary, and Transylvania, called also the Carpets, and now the Carpathian mountains.

BASTAVOE, a bay on the east side of Yell, one of the Shetland islands. Long. 1° 16′ W., lat. 60° 59′ N.

BASTE′, } Participle pass. *basted*,
Bastina′de, *v.* & *n.* } or *basten*. Fr. *bastonner*.
Bastina′do, *v.* & *n.* } *Bazata*, in the Armorick
dialect, signifies to strike with a stick; from which perhaps *baston* a stick, and all its derivatives, or collaterals, may be deduced; to strike,

beat, bang, bethwack with a cudgel; so *Cotgrave*. Applied to noisy abuse with the tongue.

What cannoneer begot this lusty blood?
He speaks plain cannon, fire, and smoke and bounce;
He gives the *bastinado* with his tongue;
Our ears are cudgell'd; not a word of his
But buffets better than a fist of France.
Zounds! I was never so bethump'd with words
Since I first call'd my brother's father dad.
Shakspeare.

But this courtesy was worse than a *bastinado* to Zelmane; so with rageful eyes she bade him defend himself. *Sidney.*

I am not apt upon a wound,
Or trivial *basting*, to despond;
Yet, I'd be loth, my days to curtail.
Hudibras.

The beaten soldier proves most manful,
That like his sword endures the anvil,
And justly's held more formidable,
The more his valour's malleable.
But he that fears a *bastinado*,
Will run away from his own shadow. *Id.*
Quoth she, I grant it is in vain
For one that's *basted* to feel pain;
Because the pangs his bones endure
Contribute nothing to the cure. *Id.*
Bastings heavy, dry, obtuse,
Only dulness can produce;
While a little gentle jerking
Sets the spirits all a-working. *Swift.*

Nick seized the longer end of the cudgel, and with it began to *bastinado* old Lewis, who had slunk into a corner, waiting the event of a squabble. *Arbuthnot.*

In Turkey, says Montesquieu, where little regard is shown to the lives and fortunes of the subject, all causes are quickly decided. The bashaw, on a summary hearing, orders which party he pleases to be *bastinadoed*, and then sends them about their business. *Blackstone's Commentaries.*

Baste, *v.* To baste meat; to drop butter, or any thing else upon it as it turns upon the spit. This was formerly with a stick covered with fat, and it is therefore probable, that the term to baste, to strike with a stick, came at length to be thus employed.

Sir, I think the meat wants what I have, a *basting*. *Shakspeare.*

The fat of roasted mutton falling on the birds, will serve to *baste* them, and so save time and butter. *Swift.*

Baste', *v. Besten.* To sew or stitch together slightly. Fr. *baster*, to stitch.

And on her legs the painted buskins wore,
Basted with bands of gold on every side;
And mailes betweene; and laced close afore.
Spenser. Faerie Queene.
Shall the proud Lord
That *bastes* his arrogance with his own seam,
And never suffers matter of the world
Enter his thoughts; save such as do revolve
And ruminate himself, shall he be worshipt;
Of that we hold an idol more than he.
Shakspeare. Troilus and Cressida.

BASTERNA, a kind of vehicle, or chariot, used by the ancient Roman ladies. Papias thinks, that basterna was first written for vesterna, but the word seems better derived from the Greek *βαςαζω*, porto, I carry. Salmasius observes, that the basterna succeeded the lectica, or litter; from which it differed very little, except that the litter was borne on the shoulders of slaves, and the basterna drawn by beasts. The inside they called the cavea, or cage: it had soft cushions of beds, and glasses on each side like our chariots. Basternæ passed from Italy into Gaul, and thence into other countries; and to this we owe our chariots, which, though we call them currus, yet they have no conformity to the ancient currus, but are in effect basternæ improved. The basterna appears also to have been used in war, for carrying baggage.

BASTI, in ancient geography, a town of the province of Bætica in Spain, situated to the west of the Campus Spartarius, now called Baza in Granada.

BASTIA, a sea-port town of Albania, in Turkey in Europe, over against the island of Corfu.

Bastia, a town of the island of Corsica, on the north-east coast, seated on a hill, in the form of an amphitheatre. It is ill built, and has narrow streets, but is defended by a citadel, and has a safe but not very commodious harbour. The inhabitants carry on a considerable trade in wine, skins, pulse, oil, and figs, and the stilettos made here are much valued by the Italians. In 1745, it was bombarded and taken by the English, but restored to the Genoese the following year. The Austrians and Piedmontese besieged it unsuccessfully in 1748. It was annexed to France in 1768, and with the exception of a short period after its capture by the English in 1794, has remained ever since in the hands of that power. It contained a population of 11 or 12,000 souls, and before the French revolution it was the capital of the island, the seat of the governor, and of the principal offices of state, and courts of justice. It was also the see of the bishop of Marian and Acci. On the new modelling of the French territory in 1791, it was created the capital of the department of the Golo, and subsequently the head-quarters of the twenty-third military division. It is now the chief town of an arrondissement in the department of Corsica, the residence of a sub-prefect, and the seat of a civil and a commercial tribunal. Thirty-three miles E.N.E. of Calvi, and fifty-eight north-east of Ajaccio. Long. 9° 26′ 30″ E., lat. 42° 41′ 36″ N.

BASTIDE de Clerence La, a town of Lower Navarre, France, the head of a canton in the department of the Lower Pyrenees, arrondissement of Bayonne. It is about six miles E.S.E. of Bayonne, and has 2000 inhabitants.

Bastide, La, a town of France, in Quercy, the head of a canton in the department of the Lot, arrondissement of Gourdon, with 1200 inhabitants, ten miles south-east of Gourdon.

Bastide de Seron, La, a town of France, in the county of Foix, department of the Arriege, arrondissement of Pamiers, with 1760 inhabitants, nine miles W.N.W. of Foix, and twelve north-west of Tarascon.

BA'STILLE, or
Bastile,
Ba'stillions.
} *Bastille*, Fr., *bastide*, Sp. from French *bastir*, to build, probably from the Greek and Latin *basis*, q. d. *basitare*, i. e. to raise upon a basis or foundation; applied to military fortresses, and to places of special defence, and of confinement.

These lordes caused *bastiles* to be made round about the cytie, with which they troubled their enemies and assaulted the walles. *Hall. King Henry VI.*

The same season there was a capytayne at Calais, r Johan Delnarues, who receyued the bysshoppe d his company with grete ioye; and so they landed tell and lytell, and all their horses and baggage, d so lodged in Calays, and thereabout in *bastylles* at they made dayly. *Froissart. Cronycle*, v. i. c. 329.

Our soldiers rose at the call of their captains, and moved their munitions farr from the wall, providing fight more close and short along the high *bastiles*, countermures, which now, that they were finished, ertopped ths walls. *Holland. Ammianus.*

Thus fortune fares her children to empound,
Which on her wheel their *bastiles* bravely beeld.
Mirror for Magistrates.

Near which there stands
A *bastile* built to imprison hands. *Hudibras.*

Bastile, anciently used as a common name for a prison, under the feudal system in our own country, was a name particularly applied to several state prisons in France: but that which was termed the bastile, by way of distinction, was situated near the gates of Paris, on the road to St. Anthony. The building was originally ommenced by order of Charles V., and finished n 1383 under the reign of his successor. The riginal projector was Hugh d' Aubriot, mayor of aris, who laid the first stone of the foundation the 22d of April, 1370. Descended from an cure parentage, this person had been raised by merit into the favor of his sovereign, and so ualified was the confidence reposed in him, t the charge of the capital was committed exsively to his care.

The bastile, as planned by d' Aubriot, consisted y of two round towers, one on each side of the d leading into Paris, from the suburbs of St. thony, and united by means of a strong high ll, in the centre of which was the gate of the n. Several additional towers were afterwards cted, and in the succeeding reign two comte courts were formed by means of intervening lls, which composed the body of the edifice. e road itself turned off to the right of the cas-, and left the whole building enclosed by a ep ditch, and secured by a counterscarp of arly thirty-six feet from the bottom. The ual entry into the bastile was from St. nthony street. Above the first gate was an moury, and on the right side of the entrance a uard room. The first enclosure, from which a ate led to the arsenal, contained barracks for the garrison, coach houses and stables for the governor and officers, shops for the sutlers, &c. A draw-bridge led from the court into the second enclosure, on entering which, was a guard-room to the left, and the governor's house to the right; and at the end a terrace, on which stood a pavilion, with beautiful walks, shaded with rows of trees. Opposite the governor's house was the entrance into the castle, and between the two were kitchens and other conveniences, erected on a blind bridge thrown across the ditch. From the second court was a draw-bridge, which led into the castle, and within the gate was another guard-room. The first court was 102 feet long, and eventy-two broad. It had six towers, and was erminated by a modern building, on the ground-loor of which was the council chamber and ibrary, and over it the apartments of the Lieuenant du Roi, the surgeon, major, and other officers, together with some rooms appropriated for prisoners of distinction. The second court was seventy-two feet long, and forty-two broad, containg two towers, and lodgings for persons belonging to the castle.

The prisoners were chiefly confined in the towers of the bastile, the entrances to which were secured by double doors of oak, and conducted to a winding stair-case, lighted by narrow grated windows, which led to the rooms above, and the dungeon below. The dungeons had no fire place, and instead of windows a small crevice towards the ditch, that served the twofold purpose of letting in air and light. They were arched, paved, and lined with stone, and were said to be places for the temporary punishment of those unhappy persons who might attempt to make their escape. In these dungeons the unfortunate princes of Armagnac, sons of James, who was beheaded, were confined by Louis XI., the oldest of whom lost his senses in prison, and the youngest, obtaining his liberty on the death of the tyrant, related a tale of suffering which, if it were not corroborated by the most unqualified evidences, would almost exceed belief. Above each of these dungeons were four stories, containing each a single room, some of them having a small dark closet adjoining them, indented in the thickness of the wall. The rooms had each one window, glazed within, and doubly grated, one near the centre of the wall, and again at its exterior surface. Each room had a fire place and stove, the vents of the chimneys being secured by strong iron grates. The double doors were secured by several locks and bars, and many of the rooms had double ceilings; the first was composed of lath and plaster, and the second of oak, supporting the floor of the room immediately above. The walls and ceilings of these apartments were all plastered and white-washed, and the floors laid with tile or stone; they were perfectly dry, owing to the extreme thickness of the building, being nearly seven English feet in diameter at the top, and gradually increasing downwards to the foundation. The three first stories were irregular polygons of about eighteen feet in diameter, and as many in height; but the fourth, or top room, called calotte, was neither so large nor so high as the others, and was arched to support the stone roof or platform with which it was overlaid.

Such was the place of horror, in which hundreds were confined at the caprice of an arbitrary monarch, or minister; and so rigidly were the wretched victims concealed, that many have been shut up for years, cut off from all communication with mankind, except the turnkeys and keepers of the prison, and neither friends nor relations have known what was become of the persons so mysteriously lost.

The officers who had the charge of the bastile were a governor, lieutenant du roi, a mayor, two adjutants, a surgeon and his assistant, a chaplain, and four turnkeys: these, with a company of invalids and officers, lodged in the castle; besides whom, a physician, two priests, a keeper of records, a clerk, a superintendent of buildings, and an engineer, who lodged in the town, his services being only occasionally required.

The king allowed the governor a daily sum for the maintenance of each prisoner, according to his rank in Society; namely,

	Livres.
For a prince of the blood . . .	50 per day.
For a marshal of France . . .	36
For a lieutenant-general . . .	24
For a person of quality or a member of parliament	15
For an ordinary judge, a priest, or persons in the finances . . .	10
For a respectable citizen . . .	5

which, together with an additional salary for firing, candles, washing, &c., more than indemnified him for the expenses of the prison.

The mode of arresting prisoners was by lettres de cachet, which were sometimes signed by the king himself, and always countersigned by the minister of Paris, or one of the secretaries of state. We subjoin the following as a copy of one of these fatal instruments.

'Mon Cousin,

'Etant peu satisfait de votre conduite, je vous fais cette lettre, pour vous dire, que mon intention est qu' aussitôt qu' elle vous aura été remise, vous ayez à vous rendre en mon château de la Bastile, poury rester jusqu' à nouvel ordre de moi. Sur ce je prie Dieu qu'il vous ait, mon Cousin, en sa sainte garde. Ecrit à Versailles, 25 Juin, 1748.

'Signé, Louis,

'Voyer d' Argenson.'

The above was inscribed,

'A mon Cousin, le Prince de Monaco, Brigadier en mon Infanterie.

Every prisoner, on coming to the Bastile, had an inventory made of every thing about him. His trunks, clothes, linen, and pockets, were searched, to discover whether there were any papers in them relative to the matter for which he was apprehended. It was not usual to search persons of a certain rank; but they were asked for their knives, razors, scissars, watches, canes, jewels, and money. These were put into a box, and labelled, with the tower and number of the chamber in which he was to be confined, and by which he was afterwards called; so that the name of a prisoner was never pronounced, nor even known, among the inferior officers of the Bastile, the appellation being No. 1, de la Bertaudiere; No. 2, du Trésor; No. 3, de la Liberté, &c.

After this examination of his person, the prisoner was usually conducted to his apartment, where he was carefully locked up, and an invalid soldier appointed to attend him, who slept near him and waited upon him. The unhappy victim soon found that in this castle all was mystery, trick, artifice, and treachery; the attendant conveyed all his words to the police, while the officers, turnkeys, valets, &c. used every effort to draw him on to speak against government, merely for the purpose of getting a reward for revealing what was said. On a prisoner's first entrance, he was not permitted to write to any person, not even the lieutenant of the police. When a person had obtained permission to write to the latter gentleman, he might solicit the indulgence of being allowed to address a letter to his family, and receive their answers, which on some occasions was granted; but letters when sent were commonly intercepted, and seldom delivered to the friends. The officers of the staff took the charge of conveying the letters of the prisoners to the police, by whom they were sent regularly twice a day, and suitable answers were addressed to the major, who communicated them to the prisoner; but if no notice was taken of any request contained in the letter of the prisoner, it was to be considered as a refusal. A criminal might ask to see the lieutenant of the police when he came to the Bastile, and in that case the conversation always turned upon the cause of his confinement. This gentleman would sometimes ask for written and signed declarations, and on these occasions nothing that the prisoner wrote or said was forgotten. A person confined in the Bastile was never anticipated in any thing—he must ask for every thing; even for permission to be shaved, an office always performed by the surgeon; who also furnished sick or indisposed persons with sugar, coffee, tea, chocolate, confections, and the remedies necessary for their complaints. Their hour of dining was eleven, and of supping, six; and the time allowed for walking was commonly one hour in the day, sometimes an hour in the morning and an hour in the evening, in the great court of the fortress.

To give the reader some imperfect idea of the internal discipline of the Bastile, under its mildest regime, we shall quote a short extract from the account of a prisoner, once confined there.—'About five in the morning,' says he, 'on the 2d of April, 1771, I was awaked by a violent knocking at my chamber door, and was commanded in the name of the king to open it. I did so, and an exempt of the police, three men and a commissary, entered my room. They desired me to dress myself, and began to search the apartment. They ordered me to open my drawers; and having examined my papers, they took such as they chose and put them into a box, which, as I understood afterwards, was carried to the police-office. The commissary asked me my name, my age, the place where I was born, how long I had been at Paris, and the manner in which I had spent my time. The examination was written down; a list was made of every thing found in the room, which, with the examination, I was desired to read, and sign. The exempt then told me to take all my body-linen, and such clothes as I chose, and to come with them. Having shut and sealed the drawers, they desired me to follow; and in going out they locked the chamber door, and took the key. On coming into the street I found a coach, into which I was desired to go, and the others followed me. After sitting for some time, the commissary told me they were carrying me to the Bastile, and soon afterwards I saw the towers. They did not go the shortest and direct road: the coach stopped at the gate in the street of St. Anthony. I saw the coachman make signs to the sentinel, and soon after the gate was opened; the guard was under arms, and the gate shut again. On coming to the first draw-bridge, it was let down, the guard there also being under arms. The coach went on and entered the castle, where a third guard was stationed. I was conducted to a room that I heard named the council chamber. After an examination similar to that of the commissary, I was desired to empty my pockets, and lay what I had in them on the table. My handkerchief and snuff-box being returned to me, my money, watch, and indeed every thing else, were put into a box, and an inventory having been made, were sealed up in my presence. The major then called for the turnkey, whose turn of duty it was, and asked what room was empty. He said the calotte de la Bertaudiere. He was ordered to convey me to it, and to carry thither my linen and my clothes. The turnkey having done so, left me and locked the doors. The weather was still extremely cold, and I was glad to see him return soon after with fire-wood, a tinder-box, and a candle. He made my fire, but told me, on leaving the tinder-box, that I might in future do it myself when so inclined. At eleven the turnkey entered with my dinner. Having spread the table with a clean napkin, he placed the dishes on it, cut the meat, and retired, taking away the knife; the dishes, plates, fork, spoon, and goblet were of pewter. The dinner consisted of soup and bouillie, a piece of roasted meat, a bottle of good table wine, a pound loaf of the best kind of household bread. In the evening at seven he brought my supper, which consisted of a roast dish, and a ragout. The same ceremony was observed in cutting the meat, to render the knife unnecessary to me. He took away the dishes he had brought for dinner, and returned at eight next morning to remove the supper things. Fridays and Saturdays, being fast or maigre days, the dinners consisted of soup, a dish of fish, and two dishes of vegetables; the suppers of two dishes of garden-stuff, and an omelet, or something made with eggs and milk. The dinners and suppers of each day in the week were different, but every Friday was the same; so that the ordinary class of prisoners saw in the course of the first week their bill of fare for fifty years, if they staid so long. I had remained in my room about three weeks, when I was one morning carried down to the council chamber, and again examined by the commissary. He then asked if I had any knowledge of some works he named, meaning those which had been written by me, if I was acquainted with the author of them, whether there were any persons concerned with him, and if I knew whether they had been printed? I told him that as I did not mean to conceal any thing, I should avoid giving him needless trouble; that I was myself the author of the works he had mentioned, and guessed I was there on that account; that they never had been printed; that the work which I conceived was the cause of my confinement had never been shown to any, but one person, whom I thought my friend, and having no accomplices, the offence, if there was any, rested solely with myself. He said my examination was one of the shortest he had ever been employed at, for it ended here. I was carried back to my room, and the next day was shaved for the first time since my confinement, it being usual never to shave a prisoner till after his first examination. A few days afterwards I wrote to the lieutenant of the police, requesting to be indulged with the use of books, pen, ink, and paper, which was granted; but I was not allowed to go down to the library (a collection of about 500 volumes, founded by some prisoner in the early part of the eighteenth century) to choose the books. Several volumes were brought to me by the turnkey, who, when I desired it, carried them back and brought others.

After my last examination I was taken down almost daily, and allowed to walk about an hour in the court within view of the sentinel; but my walks were frequently interrupted, for if any one appeared the sentinel called out 'au cabinet!' and I was then obliged to conceal myself hastily in a kind of dark closet in the wall.

'The sheets of my bed were changed once a fortnight. I was allowed four towels a-week, and my linen was taken to be washed every Saturday. I had a tallow candle daily, and in the cold season a certain number of pieces of fire wood. After being detained above eight months I was informed that an order had come to discharge me. I was desired to go down to the council chamber, every thing I had brought with me was returned, together with the key of my apartment, which I found exactly in the state I left it. During my confinement I wrote many letters to several of my friends, which were always received with civility, but not one of them had been delivered.'

The above was a case of uncommon indulgence, and displays a lenity unusual in the Bastile. In common cases the course pursued was as follows:—The prisoner, a few days after his entrance into the Bastile, was brought down to the council chamber, where a commission of interrogatory was executed by the lieutenant of the police, a counsellor of state, a master of requests, a counsellor or a commissioner of the Chatelet. When the lieutenant of the police did not himself interrogate, he casually came at the end of the examination. These commissioners were mere tools. Frequently they attempted to frighten a prisoner: laying snares for him, and employing the meanest artifices to draw a confession from him. With this insidious view, it was customary to pretend proofs, and exhibit papers without suffering him to read them; asserting that they were instruments of unavoidable conviction. Their interrogatories were always vague, and turned not only on the prisoner's own words and actions, but on his most secret thoughts, and on the discourse and conduct of persons of his acquaintance, whom they likewise wished to bring into question. The examiner usually told the prisoner that his life was at stake; that on that day his fate depended on himself; that if he made a fair declaration, they were authorised to promise him a speedy release; but if he refused to confess he would be given up to a special commission: that they were in possession of decisive documents, and authentic proofs, more than sufficient to ruin him; that his accomplices had discovered all; that the government had unknown resources, of which he could have no suspicion. The prisoners were thus beguiled by varied and infinitely multiplied interrogatories; by promises, caresses, menaces, &c. If the prisoner made the required confession, the commissioners then told him that they had no precise authority for his enlargement, but they had every reason to expect it; that they were going to solicit it, &c. The prisoner's confession, far from bettering his condition, usually gave occasion to new interrogatories, often lengthened his confinement, drew in the persons with whom he had connexions, and exposed himself to new vexations. But although there were rules adapted to all occasions, yet every thing was subject to exceptions arising from influence, recommendation, protection, intrigue, &c. Very frequently, persons confined on the same account were treated very differently, according as their recommendation was more or less considerable. The falsest things were told the prisoners with an air of sincerity and concern; as 'it is very unfortunate that the king has been prejudiced against you. His majesty cannot hear your name mentioned without being irritated. The affair for which you have lost your liberty is only a pretext. They had designs against you before, you have powerful enemies' These discourses were the etiquette of the place. It was in vain for a prisoner to ask leave to write to the king, for he never could obtain it. What constituted the perpetual and most insupportable torment of this cruel and odious inquisition, was the vague, indeterminate, false, or equivocal promises, inexhaustible and constantly deceitful hopes of a speedy release, exhortations to patience, and blind conjectures, of which the lieutenant of the police and his officers were very lavish. To cover the odium of the barbarities exercised here, and slacken the zeal of relations or patrons, to obtain justice for incarcerated innocence, the most absurd and contradictory slanders against the prisoner were frequently published; whilst the true causes of imprisonment, and real obstacles to his release, were concealed. These resources, so infinitely varied, were inexhaustible. When a prisoner who was known and protected had entirely lost his health, and his life was thought in danger, he was always sent out; the ministry not choosing that persons well known should die in the Bastile. Whenever a prisoner happened to die there, he was interred in the Parish of St. Paul, under the name of a domestic; and this falsity was also written in this register of deaths, in order to deceive posterity. But there was another register in which the true names of the deceased were entered; though it was not without great difficulty that extracts could be procured from it: and when this indulgence was granted, the commissary of the Bastile was first to be informed of the use the family intended to make of the extract.

SINGULAR DISTRESS OF AN AGED PRISONER IN THE BASTILE. Nowhere else on earth, perhaps, has human misery, by human means, been rendered so lasting, so complete, or so remediless, as within the dire walls of the Bastile of France. This the following case, the particulars of which are translated from that elegant and energetic writer M. Mercier, may sufficiently show. The heinous offence which merited an imprisonment
surpassing torture, and rendering death
sing, though for obvious reasons not spe
our author, is known from other source
consisted in some unguarded expressio
respect towards the Gallic monarch
Upon the accession of his late unfortu
cessor, the ministers then in office, mov
manity, began their administration wi
of clemency and justice: they inspecte
gisters of the Bastile, and set many of
soners at liberty. Among the numbe
old man, who had groaned in confinem
period of forty-seven years, between
and cold stone-walls. Hardened by
which strengthens both the mind and t
tution, when men are not overpowe
he had resisted the horrors of his
prisonment with an invincible and ma
His locks, white, thin, and scattered, h
acquired the rigidity of iron; whilst
environed for so long a time by a coffin
had borrowed from it a firm and comp
The narrow door of his tomb, turning
grating hinges, opened not as usual
and an unknown voice announced hi
and bade him depart. Believing this
dream, he hesitated; but at length ros
walked forth with trembling steps, ama
space he traversed: the stairs of the
halls, the court, seemed to him vast, imm
almost without bounds. He stopped
to time, and gazed around like a
traveller: his vision was with difficu
ciled to the clear light of day: he con
the heavens as a new object: his eyes
fixed, and he could not even weep.
with the newly acquired power of ch
position, his limbs, like his tongue, i
his efforts, refused to perform their
length he got through the formidable
so long before had closed upon him.
felt the motion of the carriage design
vey him to his former habitation, he
out, and uttered some inarticulate so
as he could not bear this new mo
was obliged to descend. Supported
volent arm, he sought out the street
had formerly resided: he found it, b
of his house remained: one of the
fices occupied the spot where it had
now saw nothing that brought to his re
either that particular quarter, the
or the objects with which he had
been acquainted. The houses of
neighbours, which were fresh in his
had assumed a new appearance. In
his looks directed to all the objects ar
he could discover nothing of which
smallest remembrance. Terrified,
and fetched a deep sigh. To him,
import that the city was peopled
creatures? none of them were alive
was unknown to all the world, and
nobody: and whilst he wept, he r
dungeon. At the name of the Bastile
often pronounced, and even claimed as
and the sight of his clothes that ma
mer age, the crowd gathered round
riosity, blended with pity, excited the

st aged asked him many questions, but
remembrance of the circumstances he
lated. At length accident brought in
an ancient domestic, now a super-
d porter, who, confined to his lodge for
years, had barely sufficient strength to
gate: he did not even know the master
erved; but informed him that grief and
ne had brought his wife to the grave
ars before, that his children were gone
o distant climes, and that of all his rela-
d friends none now remained. This re-
s made with the indifference which people
for events long passed, and almost for-
The miserable man groaned, and groaned
The crowd around, offering only un-
eatures to his view, made him feel the
f his calamities even more than he would
ne in the dreadful solitude that he had
uitted. Overcome with sorrow, he pre-
imself before the minister, to whose hu-
he owed that liberty which was now a
to him. Bowing down, he said, 'restore
n to that prison from which you have
ne: I cannot survive the loss of my
relations; of my friends; and, in one
f a whole generation. Is it possible in
e moment to be informed of this univer-
ruction, and not to wish for death? This
mortality, which to the rest of mankind
lowly and by degrees, has to me been
neous, the operation of a moment.
secluded from society, I lived with my-
y; but here I neither can live with my-
with this new race, to whom my anguish
pair appear only as a dream. There is
terrible in dying; but it is dreadful
to be the last.' The minister was melted;
ed the old domestic to attend this unfor-
person, as only he could talk to him of his

This discourse was the single consolation
received: for he shunned all intercourse
new race, born since he had been exiled
e world; and he passed his time in the
of Paris in the same solitude as he had
hilst confined in a dungeon for almost half
ry. But the mortification of meeting no
who could say to him, 'we were formerly
to one another,' soon put at end to his
ce.

man with the mask was the most astonish-
oner ever known to have been within the
f the Bastile; of whom, notwithstanding
curiosity and conjecture that have been
ed to ascertain his quality and pedigree,
authentic has transpired to the present
In 1698 he was brought from the island of
guerite by Mons. de St. Mars, the newly
ed governor of the Bastile, was attended
greatest respect, maintained a sumptuous
nd had every possible indulgence shown
l the time of his death in Nov. 19, 1703.
ysterious prisoner, on his removal to the
was carried in a litter, accompanied by
men on horseback, who had orders to put
death if he made the smallest attempt to
is face or otherwise discover himself.
e was concealed by a mask of black vel-
h springs of steel, which were so contrived
that he could eat without taking it off. A physician of the Bastile, who had often attended him, said he had never seen his face, though he had frequently examined his tongue and other parts of his body; but added, that he was admirably well made, that his skin was brown, his voice interesting; that he was very accomplished, read much, played on the guitar, and had an exquisite taste for lace and fine linen.

The pains taken for his concealment shows that he was a person of considerable quality and importance, and from the following circumstances it appears singular that he was never discovered. Whilst at St. Marguerite, he one day wrote something with his knife on a silver plate, and afterwards threw the plate through the window towards a boat which lay near the tower. A fisherman took up the plate and brought it to the governor, who, with great astonishment, asked the man if he had read the writing or shown it to any other person; and, although he answered in the negative, put him into confinement till he was perfectly satisfied, after which he dismissed him, saying, 'It is lucky for you that you cannot read.' The abbé Papon says, in the year 1778 I had the curiosity to visit the apartment or this unfortunate prisoner: it looks towards the sea. I found in the citadel an officer in the independent company there, seventy-nine years of age. He told me that his father had often related to him that a young lad, a barber, having seen one day something white floating on the water, took it up. It was a very fine shirt, written almost all over; he carried it to Mons. de St. Mars; who, having looked at some parts of the writing, asked the lad, with an appearance of anxiety, if he had not had the curiosity to read it. He assured him that he had not, but two days afterwards the boy was found dead in his bed.

Mons. de Jonca, for many years Lieutenant du Roi, kept an exact journal of all that passed in the Bastile. He thus records the death of the black mask. 'Monday, Nov. 19, 1703. The unknown prisoner, whom Mons. de St. Mars brought with him from the island St. Marguerite, where he had been a long time under his care, and who has always been masked with a mask of black velvet, found himself worse yesterday in coming from mass and died this evening at ten o'clock, without any great illness. The smell, however, is not less offensive. Mons. Girault, our chaplain, confessed him yesterday, his death being sudden he had not an opportunity of taking the sacraments; but our chaplain exhorted him a few minutes before he expired. He was buried on Tuesday, the 20th of November, in the burying-place of our parish of St. Paul. His burial cost forty livres.'

Immediately after the prisoner's death his apparel, linen, clothes, mattresses, and every thing that had been used by him, were burnt; the walls of his room were scraped, the floor was taken up, and every precaution used that no trace of him might be left behind; and yet there are traces. When he was on the road from St. Marguerite to his last residence, Mons. de St. Mars was overheard to reply to a question of the prisoner, relative to any design against his life. 'No, prince, your life is in safety; you must only allow yourself to be conducted.' A prisoner told Mons. la Grange Chancel that he was lodged, with other prisoners, in the room immediately over this celebrated prisoner, and found means of speaking to him by the vents of the chimney; but he refused to inform them who he was, alleging, that it would cost his own life, as well as the lives of those to whom the secret might be revealed. Various have been the individuals supposed to be the masked prisoner; particularly the duke de Beaufort, the count de Vermandois, a foreign minister, and the duke of Monmouth, have been conjectured in turn. Collateral facts, nevertheless, demonstrate that neither of these could have been the person. Voltaire, who has expressly written on this mysterious affair, says, that the secret was known to Mons. de Chamillard, and that the son-in-law of that minister conjured him on his death-bed, to tell him the name of the man with the mask; but he replied that it was a secret of state which he had sworn never to divulge. The most singular circumstance of the whole, perhaps, is, that during the confinement of this man with the mask no person of importance was missing in Europe; whence it has been thought that he was the twin brother of Louis XIV., whose birth was concealed by the advice of cardinal Richelieu, but himself preserved, lest, by the death of his brother, it should be necessary to avow him.

Upon the whole, after a long series of oppressions, the horrors of the Bastile became so notorious that in July, 1789, the people made an attack upon the building, which held out a few hours and afterwards surrendered. The governor was seized, carried through the streets, and afterwards beheaded. The major, aid-major, and lieutenant of the invalids, were killed in the streets. One soldier was killed and four wounded in the defence; but numbers were wounded, another killed, and two hanged, at the Grève, by the populace, as soon as they gained possession; the prisoners were feasted and made public spectacles in Paris, the governor's house and adjacent buildings were levelled, and the mayor afterwards decreed that the whole edifice should be demolished. See Boulanvilliers' Histoire de l'ancien Gouvernement, tom. iii.; Memoires du Maréchal Duc de Richelieu The History of the Bastile, Lond. 1790, 8vo.

BASTIMENTOS, several small islands near Terra Firma, in South America, at the mouth of the bay of Nombre de Dios, east of Porto-Bello. These islands form a very good port which serves as a watering-place for smugglers. Here admiral Hosier lay with a British squadron many years ago, and the station being unhealthy it proved fatal to himself and the greater part of his men. Long. 79° 40' W., lat. 9° 32' N. It was on this circumstance that Glover, the author of Leonidas, grounded his spirited ballad of Hosier's Ghost.

Bastinade, Bastonade, or Bastonado, the punishment of beating a criminal with a stick. It was in use among the ancient Greeks, Romans, and Jews, and still is among the Turks. The Romans called it fustigatio, fustium admonitio, or fustibus cædi; which differed from the flagellatio, as the former was done with a stick, the latter with a rod, or scourge. The fustigation was a lighter punishment, inflicted on freemen; the flagellation more severe, and reserved for slaves. It was also called tympanum, because the patient here was beaten with sticks, like a drum. It is much used in the East to this day. The method there practised is this: the criminal being laid on his belly, his feet are raised, tied to a stake, and held fast by officers for the purpose, in which posture he is beaten by a cudgel on the soles of his feet, back, chine, &c. to the number of 100 or more blows. Dr. Shaw suggests (Travels, p. 253.), that it was probably in this manner that St. Paul was 'thrice beaten with rods.'

BASTION, *n. s.* Fr. *bastion.* A huge mass of earth, usually faced with sods, sometimes with brick, rarely with stone, standing out from a rampart, of which it is a principal part, and was anciently called a bulwark.

> And with five *bastions* it did fence,
> As arming one for every sense. *Marvell.*
> To ward: but how? ay there's the question:
> Fierce the assault, unarm'd the *bastion.* *Prior.*

Bastion, in fortification, a large mass of earth at the angles of a work, connecting the curtains to each other. It is formed by two faces, two flanks, and two demigorges. The two faces form the saliant angle, or angle of the bastion; the two flanks form with the faces, the epaules or shoulders; and the union of the other two ends of the flanks with the curtains, forms the two angles of the flanks. There are various kinds of bastions: such as,—*Bastion composed,* when two sides of the interior polygon are very unequal, making the gorges also unequal. *Bastion cut, or Bastion with a tenaille,* is that whose point is cut off, and which instead thereof has a re-entering angle, or an angle inwards, with two points outwards. It is used either when without such a contrivance the angle would be too acute, or when water or some other impediment hinders the carrying on the bastion to its full extent. *Bastion deformed,* is when the irregularity of the lines and angles throws the bastion out of shape; as when it wants one of the demigorges, one side of the interior polygon being too short, &c. *Bastion flat,* is one built in the middle of the curtain, when it is too long to be defended by the usual bastions of the extremities. *Bastion half,* or *Demibastion,* also called an epaulement, has but one face and flank. *Bastion, solid,* is one entirely filled up with earth to the height of the rampart, without any void space towards the centre. *Bastion void,* or *hollow,* has the rampart and parapet ranging only round the flanks and spaces, so that a void space is left within towards the centre, where the ground is so low that if the rampart be taken, no retrenchment can be made in the centre, but what will lie under the fire of the besieged.

BASTOGNE, or Bastoonac, a large town of the duchy of Luxemburg, in the Netherlands. It carries on a considerable trade in corn and cattle, and was formerly much more flourishing than at present; but is still, after Luxemburg, the best town in this part of the Netherlands. The French took it in 1688, and demolished the fortifications. Twenty-two miles north-west of Luxemburg, and thirty-five south of Liege.

TON, BATON, or BATTON, in heraldry. See N.

TON, BATOON, in architecture, a moulding base of a column, called also torus. See TECTURE, Index.

TON, in law, one of the servants to the of the Fleet-prison, who attends the king's with a red staff, for taking into custody s are committed by the court. He also at- on prisoners who are permitted to go at y licence.

TON (Robert), a Carmelite monk, prior of vent at Scarborough, and poet laureat and orator at Oxford, in the fourteenth century. d I. in his expedition into Scotland in ook Baston with him to celebrate his vic- ver the Scots; but the poet being taken r, was obliged to change his note, and e successes of Robert Bruce. He wrote books in Latin, on the Wars of Scotland, xury of Priests, Synodical Sermons, &c.; o a volume of Tragedies and Comedies lish. He died about A. D. 1310.

TONIER, or BATONIER, one who keeps ff of a community, and carries or follows ocessions.

TWICK (Dr. John), born at Writtle, in in 1593. He was educated at Emanuel e, Cambridge, from whence he went to where he took his degree of M. D. He rds practised physic at Colchester; but man of warm imagination, and a good scholar, he used great freedom in writing popery. About 1633 he printed in Hol- Latin treatise, entitled Elenchus religionis cæ, with Flagellum Pontificis et Episco- Latialium, in which the English prelates, g themselves aimed at, he was fined in the high commission court, excommu- , prohibited from practising physic, his rdered to be burnt, and himself to remain n until he recanted. Instead of recanting, te in prison, Apologèticus ad præsules nos; and another book called, The Li- wherein he severely exclaimed against the lings, and taxed the bishops with an in- n to popery. He was now condemned star-chamber to pay a fine of £5000, to ried, lose his ears, and endure perpetual nment. The parliament in 1640 reversed roceedings, and ordered Dr. Bastwick a ion of £5000 out of the estates of the sioners who had prosecuted him.

', *v.* & *n.*
LET,
ON,
TER.

Baꞇ, Sax. This word seems to have given rise to a great number of words in many languages; as, *battre*, Fr. to beat; *battle*, *beat*, *batty*, and others. It proba- nified a weapon that did execution by its in opposition to a sharp edge; whence t and brickbat; a heavy stick or club: the of Spenser gives another meaning, which with the provincial usage of the word in where a walking-stick is called a *bat*; is also now a common word for what e the stick in driving back the ball at the f cricket.

hile he spake, lo Judas, oon of the twelve nd with him a greet company with swerdis is. *Wicliffe. St. Matt.* xxvi. 47.

Here were we first *ybatred* with the dartes
Of our owne feers from the hye temples top.
Surrey.

But neither sword nor dagger he did beare;
Seemes that no foes revengement he did feare;
Instead of them a handsome *bat* he held,
On which he leaned, as one far in elde. *Spenser.*
Estsoones the ape himself gan to vpreare
And on his shoulders high his *bat* to beare,
As if good service he were fit to doe. *Id.*

Nay, come not near the old man, keep out, che vor' ye, or I'se try whether your costard or my *bat* be the harder. *Shakspeare.*

And I remember kissing of her *batlet* [a handle used in beating linen when taken out of the buck] and the cows' dugs that her pretty chopped hands had milked. *Id.*

They were fried in arm chairs, and their bones broken with *bats*. *Hakewill.*

We came close to the shore and offered to land; but straightway we saw divers of the people with *bastons* in their hands, as it were forbidding us to land. *Bacon.*

Get me a baton; 'tis twenty times more court-like, and less trouble; and yet you wear a sword.
Beaumont and Fletcher. Elder Brother.

That does not make a man the worse,
Although his shoulders with *batoon*
Be claw'd and cudgell'd to some tune. *Hudibras.*

BAT,
BAT'EYED,
BAT'TISH,
BAT'FOWLER,
BAT'FOWLING,
BAT'TY.

Skinner's conjecture that this word is derived from the old Saxon word *bat*, a boat, because the creature it describes, with its wings expanded, resembles a boat impelled by oars, is more ingenious than solid. Our ancestors were accustomed to denominate the animal *back*; it is called so in Huloet's old dictionary; that and reremouse appear to have been the usual words for it; 'the other face had wings like a backe or flindermouse.' See Knight. Tryal of Truth, 1580, fol. 96; from hence, probably, Dr. Jamieson's derivation of backie-bird, its modern name in Scotland; we know not the reason for the change into *bat*.

See the *bat* hath flown
His cloister'd flight, ere to black Hecate's summons
The shard-borne beetle with his drowsy hums
Hath sung night's yawning peal, there shall be done
A deed of dreadful note. *Shakspeare.*

Wool of *bat*, and tongue of dog,
Adder's fork and blind worm's sting,
Lizard's leg and owlet's wing,
For a charm of powerful trouble,
Like a hell-broth boil and bubble. *Id.*

GON. You are gentlemen of brave mettle; you would lift the moon out of her sphere if she would continue in it five weeks without changing.

SEB. We would so, and then go a *bat-fowling*.
Id. Tempest.

Yet could his *bat-ey'd* legions eas'ly see
In this dark chaos. *Fletcher. Purple Island.*

But then grew reason dark; that she no more
Could the fair forms of good and truth discern;
Bats they became, that eagles were before;
And this they got by their desire to learn. *Davies.*

Some animals are placed in the middle betwixt two kinds, as *bats*, which have something of birds and beasts. *Locke.*

Where swallows in the winter season keep,
And how the drowsy *bat* and dormouse sleep. *Gay.*

Bodies lighted at night by fire, must have a brighter lustre than by day,—as sacking of cities, *bat-fowling*. *Peacham.*

> Far different there from all that charm'd before,
> The various terrors of that horrid shore;
> Those matted woods where birds forget to sing,
> But silent *bats* in drowsy clusters cling. *Goldsmith.*

The birds of passage would in a dark night immediately make for a light-house, and destroy themselves by flying with violence against it, as is well known to *bat-fowlers*.

BAT, BATCH, BATE, or BATZ. See BATZ.

BAT-FOWLING, a particular manner of bird-catching in the night-time, while they are at roost upon perches, trees, or hedges. They light torches or straw, and then beat the bushes: upon which the birds, flying to the flames, are caught either with nets or otherwise.

BAT, in zoology. See VESPERTILIO.

BAT-HORSES, or BAW-HORSES, in military affairs, baggage-horses belonging to the officer when on actual duty. Bat-men, or Baw-men, originally servants hired in war time to take care of the horses belonging to the artillery, &c. The same name is now given to those who are excused regimental duty for the express purpose of attending to the horses belonging to the officers.

BATA, in botany, the Musa Paradisiaca of Linnæus.

BATACOLO, a small fort and garrison on the east of the island of Ceylon. Lat. 7° 45′ N., long. 81° 50′ E. This place has little or no connexion with the south and west parts of the island, the harbour being incommodious. Here is also an uncommonly bold shore, and immense rocks of very grotesque figures, such are the Friar's Hood, the Elephant, and the Pagoda Rocks.

BATANY, BATANG, or BATANY HOOK, a sea-port town on the east coast of the island of Gilolo, where cruizing vessels were formerly kept by the Dutch for the prevention of smuggling. There is a spacious natural fortress on a point of land of very difficult access, and containing several houses and gardens. The whole area thus surrounded is about three miles in circumference.

BATARDEAU, in bridge building. See COFFER-DAMS.

BATATAS, in entomology, a species of acarus, found on the potatoe in Surinam, and some other parts of South America. It is rather rough and sanguineous; anterior legs as long as the body.

BATAVA, in ancient geography, a citadel of Vindelicia, so called from the Cohors Batava, in garrison under the commander in Rhætia; now Passau; being called Batau, from the Batavi; then Bassau, and Passau; situated in Bavaria, at the confluence of the Danube, Inn, and Iltz. See PASSAU.

BATAVI, the ancient Batavians, a branch of the Catti, who, in a domestic sedition, being expelled their country, occupied the extremity of the coast of Gaul, or the modern Holland, at that time uninhabited, together with the island, called from them Insula Batavorum, situated among shoals. Thus, Lucan, l. 1, v. 431.

> Vangiones: Batavique truces, quos ære recurvo
> Stridentes acuere tubæ:

Their name Batavi they carried with them from Germany, there being some towns in the territory of the Catti, called Battenberg, and Battenhausen. The bravery of the Batavi, especially the horsemen, procured them not only great honor from the Romans, being called their brothers and friends; but an exemption from taxes, being obliged only to furnish men and arms.

BATAVIA, a city on the north coast of the island of Java, the capital of the Dutch settlements in the East Indies. It stands at the mouth of the river Jacatra, in the bosom of a large commodious bay, which is one of the safest harbours in India. Lat. 6° 12′ N., long. 107° 4′ E. The Jacatra passes through the midst of the town, and forms various canals of running water, all faced with freestone, and adorned with trees: over these canals are upwards of fifty bridges, besides those which lie without the town. The streets are all perfectly straight, and each, on an average, thirty feet broad. The houses are built of stone. The city is about a league and a half in circumference, and has five gates; but there are far more houses without than within them.

A circular range of islands protects the harbour of Batavia from any heavy swell, and renders it safe anchorage, these are Onrust, Edam, Cooper's Isle, and Purmerend, containing warehouses, hospitals, and naval arsenals. From the roadstead there are scarcely any of the buildings of Batavia visible, except the great church, the rest being hid by the palms and other high spreading trees.

Batavia is well fortified, and the approaches both by sea and land are secured by strong outworks. On an island, at the entrance of the harbour, there is a fort which commands that passage, and protects the extensive dock-yards. The citadel, on the east bank of the Jacatra, is a regular fortress, built of coral rock: it contains the house of the governor-general of the Indies, and the principal authorities. The great church is said to have cost £80,000; but the public buildings, generally, are inferior. There are besides five other Christian churches, a mosque, and a temple belonging to the Chinese; the stadt-house, bridewell, infirmary, orphan-house, and two public hospitals, one of which is in the island of Purmerend. Here are also arsenals and magazines, well stocked with military stores and ammunition. The government consists of a council formed by the governor-general of the East Indies, who is president, the director-general, or governor of Java, nine members, and two secretaries. The power of this body is absolute; and the governor-general may, on his own responsibility, adopt any measures rejected by the others. The police and criminal magistracy is under a Fiscal, who can levy fines and inflict punishments at discretion. The regulation of all matters relating to navigation are under the marine fiscal; and a Sháh-bender, or captain of the port, acts as consul-general for all nations. A garrison of about 5000 men was maintained by the Dutch, in Batavia, before it was captured by our troops, under Sir Samuel Auchmuty in 1811. At that period the number of inhabitants was 47,217.

In 1792 this city contained upwards of [illegible] houses liable to be rated; and a population of 115,960 souls, of which 6000 were citizens, 22,000 Chinese, and 17,000 slaves! The population of Batavia and its immediate dependencies, is estimated at 150,000 souls. The last census of the town is as follows:

Europeans, 543; Arab, 318; Javanese, 3331; Bali-men, 7720; Moluccans, 82; native Dutch, 1485: Malays, 3155; Macassars, 4115; Sumbayans, 237; Timorotes, 24; Chinese, 11,854; Slaves, 14,239.

The principal articles imported are cloths, drugs, and opium, from Bengal; camphor, benzoin, birds-nests (hirundo esculenta), coa-lin, and ivory, from Sumatra; garden-seeds, butter, Madeira and Constantia wines, from the Cape of Good Hope; porcelain, tea, silks, nankeens, alum, borax, sulphur, cinnabar, mother of pearl, paper, sweetmeats, and tobacco, from China; copper, sword-blades, camphor, soy, porcelain, lackered ware, and silks, from Japan. The exports from Batavia are pepper, sugar, rice, coffee, and arrack; sanchú, (burnt wine.) a kind of Chinese arack. To China, besides these articles, they send birds-nests, of the edible swallow, bicho do mar, sea-slug, or holothuria; cotton, spices, tin, rattans, sapan-wood, sago, and wax. To Borneo and the Moluccas, piece-goods, opium, and a few European articles. To the other Dutch settlements, rice. Bullion was the principal article imported from Europe before the French revolution.

Batavia has always been unhealthy; and the mortality in the garrison of the fort is almost incredible. This arises evidently from the peculiar position of the town, and its injudicious ornaments. The plain around is flat, and filled with rice grounds, which must necessarily be often laid under water; while the streets have each its canal and row of evergreens, which at once occasion pestiferous exhalations, and prevent a free circulation of the air. A part of the plain, also, on the left of the fort, is an impracticable morass. The thermometer at Batavia is seldom above 90°, and usually as low as 84°: hence it is not excess of heat that makes it so unhealthy, yet such is the mortality, that one-fifth of the European inhabitants die annually.

Amongst other causes of this, however, the intemperance of the mode of living must not be overlooked. The vile habits of the Pagan and Mahommedan natives are but too contagious with the Europeans. The multitude of domestic slaves is a source of the worst habits: and most of the female part of society are a degenerate, debased race, lost in indolence and sensuality.

'Notwithstanding the republican form of the Dutch government,' says Mr. Hamilton, 'in no part of the world is the distinction of ranks so minutely and frivolously attended to as at Batavia, and the salaries allowed to the Dutch Company's servants being inadequate to the support of the establishment they think necessary for the support of their dignity, corruption and bribery are universal. In society every individual is as stiff and formal, and as feelingly alive to every infraction of his privileges, as if his happiness or misery depended on the due observance of them. Nothing is more particularly attended to at entertainments by the master of the house, than the seating of every guest, and drinking their healths in the exact order of precedency.

To provide against future disputes on the subject of precedency, the respective ranks of all the company's servants were ascertained by a resolution of government, which was revised and renewed in 1764. The act by which these rules were first established consists of 131 articles, and enters into the most minute details respecting the carriages, horses, chairs, servants, &c. &c. of the company's servants.

'By the eighth article, little chaises for children, drawn by the hand, must not be gilt or painted but in exact proportion to the rank of the parents. Ladies whose husbands are below the rank of counsellors of the Indies, may not wear at one time jewels more in value than six thousand rix dollars: wives of senior merchants are limited to four thousand; others to three, two, and one thousand rix dollars.

'Article forty-ninth permits ladies of the higher ranks to go abroad with three female attendants, who may wear ear-rings of single middle sized diamonds, gold hair pins, petticoats of cloth, of gold, or silver gauze; chains of gold and of beads, and girdles of gold; but they must not wear diamonds, pearls, nor any kind of jewels in their hair. Wives of senior merchants may have two, and ladies in an inferior station one female attendant, who may wear ear-rings of small diamonds, gold hair pins, a jacket of fine linen, and a chintz petticoat; but no gold or silver stuffs or silks, or any jewels, true or false pearls, or any ornament of gold. The eighty-third article recommends to the Dutch East India Company's servants in Bengal, not to surpass their predecessors in pomp of dress and appearance; and the 110th permits the director of the factory at Surat, when he goes abroad in state, to carry among other things, four fans, made after the fashion of the country, with the feathers of the bird of paradise and cow-hair, with gold cases and hands. It is remarkable, that in these regulations the tax on carriages increases downwards, from the higher to the lower ranks, and penalties are attached to the infraction of these statutes.'

The Chinese, who are the most effective part of the population, are indefatigably industrious, but notorious at the same time for cunning and dishonesty. 'The Dutch,' they say, 'have only one eye, but the Chinese have two.' All the mechanic trades are carried on by them; and the more wealthy are merchants, some of whom farm the customs and taxes. They inhabit a separate town, or campong, close to the city; it is thronged with men and pigs, of which the Chinese keep some hundred thousands. The Malays, who are Mahommedans, have a bad character; but they have been misrepresented by the Dutch, whose narrow, tyrannical policy has alienated the affections of most of the natives. The Amboynese, generally employed as builders, are bold and turbulent.

The foundations of Batavia were laid in 1619 by the Dutch commodore Koen, and so prompt and successful were his companions, that it soon became the metropolis of the East India possessions. In 1629 it compelled an army of 200,000 Javanese to retire, after a siege of several months. Not long after, the viceroy rebelled against the emperor of Java: the Dutch did not fail to turn this circumstance to their own advantage; and at length contrived to get these sovereigns completely into their power. Their avarice and injustice, however, made the natives very anxious to emancipate themselves, and in 1722 a general conspiracy was discovered, only just in time to prevent its execution. In 1740, not twenty years afterwards, 12,000 Chinese were massacred in one day, by order of the governor, on the plea, real or pretended, of a similar movement.

In 1798 a new camp at Welte Freden was established in a woody plain, a league and a half up the country. The road to it is along a fine causeway, with country seats on one side, and on the other a navigable canal. The barracks, which are built of wood and stone, occupy a third of the ground on the opposite side of the entrance. The Tannabang, a large Malay village, in which there are several Chinese families, stands on a height two leagues and a half from the city. Mester Cornelis is a small fort, a league beyond Welte Freden, surrounded by small Javanese, Malay, and Chinese villages. The ground rises insensibly to Mester Cornelis, which is seen half a mile off. This fort lies in a hollow, on the bank of the great river, commanded by a small height. On the right and left of the road are bamboo barracks for the Maduran artillery, of which this is the depôt. The fort is built of stone, but is not strong, the demi-bastions being scarcely two feet thick, by four high, and surrounded by a dry ditch. The entrance is by a stone bridge, within which is the guard-house, and near to it another house occupied by the European artillery. The fort is quitted by another bridge on the opposite side, communicating with a range of wooden barracks, in which are the artillery officers and companies under training.

The whole of the Dutch policy here has been wretchedly arbitrary and severe; and although Sir Stamford Raffles, the British governor, during our possession of the place, very successfully reformed their system, the new authorities are said to have returned to it. But Sir Stamford observes, 'of the splendor and magnificence which procured for this capital the title of the Queen of the East, little is now to be found. Streets have been pulled down, canals half filled up, forts demolished, and palaces levelled with the dust. The stadt-house, where the supreme court of justice and magistracy still assemble, remains; merchants transact their business in the town during the day, and its warehouses still contain the richest productions of the island, but few Europeans of respectability sleep within its limits.'

BATAVIA, the ancient name of Holland. See BATAVORUM.

BATAVIAN REPUBLIC, one of the late democratic states, formed upon the plan of the French republic, out of the ci-devant United Provinces, or States of Holland. The Stadholderate was abolished in 1795: a republic established March 1798. On the 24th of May 1806, it was converted into a kingdom, in 1815 united with Belgium, and in 1830 again separated. See BELGIUM.

BATAVORUM OPPIDUM, in ancient geography, a town in the island of Batavia, mentioned by Tacitus: some suppose it to be Nimeguen.

BATCALE, or BATACOLE, a sea-port on the coast of Malabar, Hindostan, where the East India Company formerly had a settlement. In 1670 all the settlers were murdered by the natives; but it was again ceded to the company. Twenty miles north from Barcelore.

BATCHELOR'S PEAR, a name given to a species of nightshade. See SOLANUM.

BATCH, the past participle of *baken*, to bake; any entire quantity; a batch of bread is the bread baked at the same time.

> How now, thou core of envy,
> Thou crusty *batch* of nature, what's the news?
> *Shakspeare.*
>
> Except he were of the same meal and *batch*.
> *Ben Jonson.*

BATCHIAN ISLAND, one of the Moluccas, separated from Gilolo by a narrow strait, and situated between the equator and the first degree of south latitude. It is of an irregular shape, in length about fifty-two miles, by twenty the average breadth. In 1775 the Sultan of Batchian claimed dominion over the islands of Ooby, Ceram, and Goram, but was himself entirely subject to the influence of the Dutch. The inhabitants of Batchian are Malay Mahommedans.

BATE, } BA'TABLE, } BA'TEFUL. } Dr. Johnson thinks it is contracted from debate; Skinner imagines that it is derived from Ang. Sax. *beatan* to beat to strike; Todd says positively it is from the Saxon bate, contention, strife or a make-bate.

> Among which fooles (mark Baldwine) I am one,
> That would not stay myself in mine estate;
> I thought to rule, but to obey to none,
> And therefore fell I with my king at *bate*.
> *Mirror for Magistrates.*
>
> Naked as from the wombe we came, if we depart,
> What toyle to seeke that we must leve? what bote to vex the heart?
> What lyef leade testey men, they that consume their days
> In inwarde freets, untemper'd *bates*, at stryef with sum alwaies. *Surrey. Eccles.* chap. iv.
>
> Pletyng the lawe
> For ev'ry strawe,
> Shall prove a thrifty man,
> With *bate* and strife,
> But by my life
> I cannot tell you whan. *Sir Tho. More.*
>
> Breeds no *bate* with telling of discreet stories.
> *Shakspeare.*
>
> An honest, willing, kind fellow, as ever servant shall come in house withal; and I warrant you no tell-tale nor no breed-*bate*. *Id.*
>
> This sour informer, this *bate*-breeding spy,
> This canker that eats up love's tender spring,
> This carry-tale, dissensious jealousy,
> That sometimes true news, sometimes false, doth bring. *Id. Venus and Adon.*
>
> These appear unto us like unto the *batable* ground lying betwixt England and Scotland, (whilest as yet two distinct kingdomes) in so dubious a posture it is hard to say to which side they do belong.
> *Fuller. General Worthies.*
>
> *Batable* ground is terra pugnabilis. *Batable* ground seems to be the ground heretofore in question, whether it belonged to England or Scotland, lying between both kingdoms. *Cowel.*
>
> He knew her haunt, and haunted in the same,
> And taught his sheep her sheep in food to thwart;

as it did *bateful* question frame,
n knees confess his guilty part. *Sidney.*

Contracted from *abate*, old
ss, Saxon; to beat down; to de-
ENT, press; to lessen; to diminish;
. to sink; or cause to sink; to
take away; to remit.

end low, and in a bondsman's key,
breath, and whisp'ring humbleness,
Shakspeare. Merchant of Venice.

, we were talking, that our garments seem
, as when we were at Tunis, at the mar-
r daughter: who is now queen.
d as the rarest thing that e'er came there,
eech you, widow Dido. *Id. Tempest.*

, am not I fallen away vilely since this
? Do I not *bate?* Do I not dwindle?
in hangs about me like an old lady's loose
Id. Henry IV.

Yet I argue not
leaven's hand or will, nor *bate* a jot
or hope; but still bear up and steer
ward. *Milton.*

speed, and I will *bate* of mine. *Dryden.*

e landholder's rent falls, he must either
bourer's wages, or not employ or not pay
Locke.

, is to waste a piece of stuff: instead of
much was cut off, carpenters ask what
t piece of stuff had.
Moxon's Mechanical Exercises.

n disputes; and (therefore *bating* religious
ich as touch society,) I would subscribe to
which does not choak me in the first pas-
than be drawn into one. *Sterne.*

. a term in falconry; to flutter the
preparing for flight, particularly at the
ey: probably from *battre*. Fr.

d like estridges that wing the wind;
e eagles having lately bathed.
Shakspeare. I. Henry IV.

unmann'd blood *bating* in my cheek.
Id. Romeo and Juliet.

atural action with birds, after bathing,
he moisture from their wings; also
rous of their food or prey, as in the
assage:

r are we able to prey for ourselves, but
and hood us so with sour awe of parents,
not offer to *bate* at our desires.
Albumazar. Old Play vii. 179.

e meaning of the word is beautifully
l in the following passage of Bacon:

(viz. in matters of business) I would to
were hooded, that I saw less; or that I
m more; for now I am like a hawk that
I see occasion of service; but cannot fly
n ty'd to another's first.

George), an eminent physician, born
Morton, near Buckingham, in 1608.
e obtained a licence, and for some
tised in and about Oxford; chiefly
Puritans. In 1637 he took his de-
D., and became so eminent, that when
es I. kept his court at Oxford he was
al physician. When the king's affairs
Dr. Bate removed to London, where he
ysician to the Charter-house, fellow of
of physicians, and afterwards princi-
ian to Oliver Cromwell. Upon the
he again got into favor with the royal
made principal physician to king Charles II., and fellow to the Roya. Sceiety; and this, as we are told by Wood, owing to a report raised by his friends that he gave the protector a dose which hastened his death. Dr. Bate wrote in Latin a history of the civil wars in England, and some other tracts on physical subjects. He died at his house in Hatton-garden, and was buried at Kingston-upon-Thames in Surrey.

Bate (John), prior of the monastery of Carmelites at York in the fifteenth century, was born in Northumberland, and educated at York and Oxford. Bate abundantly answered the hopes conceived of him, and became an eminent philosopher and divine, remarkable for his skill in the Greek tongue. He took the degree of D. D. at Oxford, and afterwards distinguished himself as an author. The Carmelites of York were so sensible of his merit, that, upon a vacancy, they offered him the government of their house; which he accepted, and discharged that office with great prudence and success. He died in 1423, in the beginning of the reign of Henry IV.

Bate (Julius), a voluminous author, and an intimate friend of the celebrated Hutchinson; by whose recommendation he obtained from Charles, duke of Somerset, a presentation to the living of Sutton in Sussex. His publications were: 1. An Essay towards explaining the first Chapter of Genesis, in answer to Mr. Warburton, 1741, 8vo. 2. The Philosophical Principles of Moses asserted and defended against the Misrepresentations of Mr. David Jennings, 1744, 8vo. 3. Remarks upon Mr. Warburton's Remarks, shewing that the Ancients knew there was a Future State, and that the Jews were not under an equal Providence, 1745, 8vo. 4. The Faith of the Ancient Jews in the Law of Moses, and the Evidence of the Types, vindicated in a Letter to Dr. Stebbing, 1747, 8vo. 5. Micah, v. 2. and Matthew, ii. 6. reconciled, 1749, 8vo. 6. An Hebrew Grammar, formed on the Usage of the Words by the Inspired Writers, 1750, 8vo. 7. The Use and Intent of Prophecy, and History of the Fall, cleared, 1750, 8vo.; this was occasioned by Middleton's Examination of Sherlock. 8. The Blessing of Judah and Jacob considered, and the Æra of Daniel's Weeks ascertained, in two Dissertations, 1753, 8vo. The Integrity of the Hebrew Text and many Passages of Scripture vindicated from the Objections and Misconstructions of Mr. Kennicot, 1755, 8vo. 10. A Reply to Dr. Sharp's Review, and Defence of his Dissertations on the Scripture Meaning of Eloim and Berith, 1755, 8vo. 11. A Reply to Dr. Sharp's Review and Defence of his Dissertation on the Scripture Meaning of Berith; with an Appendix in Answer to the Doctor's Discourse on Cherubim, Part II., 1755, 8vo. 12. Remarks upon Dr. Benson's Sermon on the Gospel Method of Justification, 1755, 8vo. 13. Critica Hebræa, or a Hebrew English Dictionary without Points, &c. 1764, 4to. 14. A new and literal Translation from the original Hebrew of the Pentateuch of Moses, and of the Historical Books of the Old Testament, to the end of II. Kings; with Notes critical and explanatory, 1737, 4to. This learned writer died April 7th, 1771.

Bate, or **Bhatta Isle** an island of the pro-

Coins
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was
leges to
rchs re-
nfessor's
; but it
r's death,
snes in the
the reign of
tion of Odo,
lords who
nate Robert, it
city owes its
ohn de Villula,
d it of William
leave to remove
ither, uniting it to
He may indeed be
ler; all the public
m; and, becoming
gn of Henry I., he
on the monastery.
bsequent periods, are
raged manufactures of
, however, crept among
of the religious orders;
enry VII., bishop King
luce several regulations to
Bath is indebted to this
ful Abbey-church, &c., de-
and St. Paul, built in the
considered to be one of the
ant of the pure Gothic archi-
begun by him in 1495, and
The dimensions of the win-
uniform; they are large and
ed: from the centre of the cross
62 feet high, crowned with light
nts. The body of the abbey is
from east to west, and 126 from
h; and the breadth of the body and
venty-two feet. The principal en-
e west is through a fine arched door-
the attention of visitors is forcibly
y the excellent proportion and beauti-
etry of this noble pile. In the interior
ndsome altar-tomb to the memory of
Montague. The vestry contains a small
, founded by bishop Lake. Bath has four
s, each of which has its church. The
church is in the parish of St. Peter and St.
the names of the three others are St.
's, a freestone building, erected in 1768, at
st end of which is a square tower, contain-
ght bells: St. Michael's, which was begun
34, has a fine dome, and is of the Doric
Walcot church is dedicated to St. Swithin,
was rebuilt in 1780; this parish has a
entirely devoted to the accommodation
lower orders, and contains four chapels of
In the reign of Elizabeth, the several
es of Bath were consolidated into one
y.

e are also two reading-schools, many pub-
raries, and literary and philosophical insti-
s, the West of England Agricultural Society.

is Bath deficient in charitable establishments. Here is a great hospital and infirmary, capable of receiving 150 patients, who have advice and the use of the waters gratis; Bellot's hospital, and the Black alms; the Stranger's Friend Society; the Eye Infirmary, and the Puerperal, or Child-bed Society. The free Grammar-school, and Blue-coat school, are also well-conducted establishments. The places of divine worship for dissenters are numerous; that belonging to the Roman Catholics was formerly the theatre.

By the census returned to parliament in 1832, Bath contained 7327 houses and 38,811 inhabitants; exclusive of the out-parishes of Bathwick, Bathhampton, Batheaston, and Bathford. The city was at one time governed by a steward; but, in 1590, queen Elizabeth granted it a charter, declaring it a city, sole in itself, and vesting the government in a mayor, recorder, ten aldermen, and twenty-four common-council; from the body of aldermen the mayor is elected, and from the council are chosen the chamberlain, two bailiffs, and two constables, annually. It sends two members to parliament, who are elected by the corporation. The see of Bath and Wells comprehends the whole county of Somerset, except a few churches in Bristol, and contains 388 parishes, and 503 churches and chapels. Sixty of the parishes are impropriate. The bishop's palace is at Wells. The vicarage of the abbey is included in the rectory of Bath, and Walcot is a rectory. Bath races are held in September, on Lansdown, one of the highest hills near the city, about three miles in extent. On this down is also held an annual fair, on the 10th of August, for cheese, cattle, horses, and all kinds of merchandise, and a fair is also held in Holloway, on the other side of the city, May 14th; two other fairs are held in the town.

By far the largest and finest part of this beautiful city is without the walls, particularly Queen Square, in the midst of which is a garden with gravel walks, and having an obelisk in the centre. Another principal ornament of this part of the town is the King's Circus, with three openings at equal distances, leading into as many streets. The fronts of the houses are adorned with three rows of columns, in pairs of the Doric, Ionic, and Corinthian orders, standing over each other, and the frieze is embellished with sculpture. In the centre is a large covered reservoir of water, filled from springs rising in the adjacent hills, and serving for the supply of the neighbourhood.

The Royal Cresent is another striking object: the whole extensive front is of an elliptical form, consisting of thirty-one noble stone houses, uniformly built, with rustic basements, surmounted with columns of the Ionic order. It stands on an eminence, with an open and gentle declivity or lawn of twenty acres before it, down to the Avon, commanding delightful and uninterrupted prospects of the city, the vale below, and the river as it meanders towards Bristol; as well as of the opposite hills, and numerous villas, hamlets, and roads, which intersect and adorn it. Behind this crescent rise St. James's Square, Lansdown Crescent, Somerset Place, Camden Place, Portland Place, Catherine Place, Mount

Zion, a large extent of buildings on the summit of Beacon Hill; Cavendish Crescent and Place, Lansdown Grove, Lansdown Place, and Belle Vue. Besides these are Belvidere, Belmont, and Paragon Buildings, Marlborough Buildings, Burlington Place, and many other intervening streets and buildings. Nothing indeed can be more picturesque than the appearance of this part of the town.

Across the Avon, on the eastern side of the city, stands Pulteney Bridge, an elegant structure, of one arch, covered on each side with shops, and leading immediately from High Street, in the centre of the city, to Bathwick, where several elegant new erections have lately arisen. Laura Place, which is a square, built in the form of a lozenge, is peculiarly beautiful; and passing through the centre of this place diagonally, in a direct line from the bridge, is Great Pulteney Street, of considerable length, uniformly built, and lighted with gas. At the distant extremity of this street, in front, is Sydney Gardens, or Vauxhall, which range and expand up the side of Claverton Hill, and are very tastefully laid out. Here also runs the Kennet and Avon canal, ornamented with two cast-iron bridges in the Chinese style. At the top of the hill is an extensive plantation of firs. Around Sydney Gardens extends Sydney Place, an admirable specimen of architecture, forming an area, of which the gardens are the centre. In one of the wings of this place her late majesty, queen Charlotte, resided during her illness in 1817; and near it stands the elegant new parish church of Bathwick, built in the modern gothic style, and dedicated to St. Mary.

In the south-east part of the town is Orange Grove, a spacious area, planted with elms, and having an obelisk in its centre; adjoining to this are the walks where the Old Assembly Rooms are situated, and near to them are the North and South Parades. These are two elegant rows of houses, each 580 feet long, elevated on arches, and uniformly built, with paved terraces in front, fifty-two feet wide: whence are extensive and enchanting views of Prior Park, the magnificent seat of the late Ralph Allen, esq. Beechen Cliff, with its hanging woods, and Claverton Hill, richly diversified with villas and enclosures, and crowned with an ornamental castellated structure, which is surrounded with a plantation of firs, to a considerable extent. In the gardens below the South Parade, on the banks of the Avon, is now building an elegant new square, to be called Kingston Square, which, with the intended new streets, and a spacious esplanade next the water, will occupy the whole space of ground between the city and the river on that side. On the lower side of the town are many ranges of building, which, in most other places, would be deemed fine; among these are St. James's Parade, and Westgate Buildings, and adjacent to Kingsmead Square are New King Street, Green-Park Place, east and west; forming two sides of a triangle, the base or hypothenuse of which opens to the river, and Brunswick Terrace, and Kingsmead Terrace, pleasantly overlooking the meadows, and commanding views of the surrounding country.

On the north-eastern extremity of the town, at the entrance from the London Road, are many new ranges of magnificent buildings, with paved terraccs, called Kensington, Piccadilly, Grosvenor Place, and Walcot Terrace.

The amusements of Bath are under the superintendance of two masters of the ceremonies, who are elected to that office by the subscribers to the assemblies, balls, &c., one of whom presides at the Upper Rooms, and the other at the Lower Rooms. Besides these, there is a third appointed to preside at the city assemblies at the Town Hall. The lodging-houses are numerous and commodious, and adapted to all ranks who may be induced to seek benefit from these salutary waters. Sedan-chairs are established here, the fares of which are settled by the mayor and justices; and here are also hackney-coaches and chariots, regulated as in London. Besides the Assembly Rooms and Pump Room, which are the usual promenades for persons of fashion, in wet or unfavorable weather; and the Riding Schools, which are the resort of equestrians on similar occasions; the neighbourhood of Bath abounds with beautiful walks and rides, and particularly Claverton Down, and Lansdown for the latter, affording the most salubrious air, and the most extensive prospects.

The old bridge over the Avon is a handsome structure, with stone balustrades. The intercourse between Bath and Bristol is very great, and besides carriages for the conveyance of goods, and private carriages of every description, there are not less than forty stage-coaches, that regularly pass forward and backward between the two cities. The whole city of Bath is amply supplied with the most excellent spring-water, brought from the neighbouring hills, and distributed to every house by means of leaden-pipes.

The Guildhall, situate on the east side of High Street, is worthy of such a city. Besides the Vestibule and the Public Hall, for the city sessions, court of record, justices' meetings, court of conscience, and other public business, is a record-room, the town-clerk's and other offices, and above stairs is a noble banqueting and ball-room, with a music-gallery, tea-room, drawing-room, &c. Behind this elegant structure is the market-place, which is exceedingly commodious, spacious, well paved, and under cover. The markets are held daily for all kinds of provisions; and in point of supply and regulation are excelled by none in England. The principal days for butchers' meat, are on Wednesday and Saturday; and for fish, Monday, Wednesday, and Friday. The city prison is a handsome edifice, built of freestone, near the river in Bathwick.

After this general outline of the place, the several public baths next claim attention—these are, the King's, the Queen's, the Cross, the Hot, and the Corporation baths, which are the property and under the superintendence of the corporation; besides which are the Kingston, or Abbey baths, now the property of lord Manvers, which are commodiously fitted up, and where invalids are accommodated at any hour of the day or night. The taste of the waters is pleasant, impregnated with a vitriolic principle, which yields, upon evaporation, a small portion of neutral salt, with a calcareous earth and [illegible] They prove highly serviceable in bilious cas plaints, as well as in nervous, paralytic, rheumatic, and gouty disorders. The King's bath is a large basin of sixty-five feet by forty, and contains rather more than 346 tons of water, when filled to its usual height. A brass hand-rail, of an octagonal form, encloses the centre: under it is a large reservoir, into which the main spring rises with great force, and from whence the water is conveyed, in its greatest purity, by means of pipes, to the pumps above, for drinking, as well as distributed with more equable heat throughout the bath, in which the main spring has its source; the sides of the bath are surrounded by a handsome colonnade of the Doric order, to shelter the bathers from the inclemency of the weather. Two commodious rooms are connected with this bath, fitted up with pumps and pipes to direct the hot water to any particular part of the body. The Queen's bath, which is attached to the King's, and opens into it, forms a square of twenty-five feet, and is furnished with similar conveniences; its temperature is somewhat lower. The Cross bath received its appellation from a cross erected in its centre by the earl of Melfort, in the time of James II. which is now removed. It is situate at the western extremity of Bath-street, about 150 yards from the two former, is of a triangular form, and has a small eat pump-room attached to it. Fahrenheit's hermometer rises in it to between 93 and 94.

		Dr. Howard.	Dr. Charlton.	Dr. Lucas.	
om the mp of e . . .	King's bath	113	116	119	. . . Of Fahrenheit's thermometer;
	Hot bath . .	115	116	119	
	Cross bath .	108	110	114	

d states that on evaporation, a gallon has been und to contain of iron $\frac{2}{37}$ or $\frac{2}{38}$ parts of a grain; alcareous earth 22½ grains, selenite 31½ grains, Glauber's salt 25¾ grains, sea salt 51½ grains, which were mixed with an oily matter, but not more so than is common to all waters. From this it appears that the Bath waters are acidulous chalybeates, in which iron and earth are kept suspended by means of aerial acid; and that they are impregnated with a small portion of selenite, sea salt, and muriated magnesia. They were for a long time esteemed sulphureous; but they clearly are not, for they do not affect the color of silver or metallic solutions, nor produce any other effect of water impregnated with sulphur. There is some probability that azotic gas is an active ingredient in them, but this has not been properly ascertained. Dr. Gibbes has lately added to their impregnations the silicious earth. But their contents have never been sufficiently investigated to account for all their effects. They operate powerfully by urine, and promote perspiration; if drank quickly and in large draughts they purge, but if taken slowly and in small quantities have an opposite effect. These waters are adapted to atonic gout, to visceral obstructions, nephritic complaints, dyspepsia, and to weak and exhausted constitutions; they relieve externally in all the complaints for which the more stimulant power of the balneum is employed. To the young and plethoric they are frequently injurious; and unless some evacuations are premised, they often disagree with the patient, occasioning headache, heat in the hands, drowsiness, and giddiness.

The Hot bath stands about forty yards south-west of the King's, and is so called from the superior heat of its waters, which approaches to 117 of Fahrenheit. This structure, which is about fifty-six feet square, was built under the direction of John Wood, Esq. The usual time of bathing in the King's and Cross baths is between six and ten in the morning, after which time the water is discharged, and the springs afford a fresh supply of water for the next day. The seasons for bathing are the spring and fall.

Dr. Higgens has proved that a Winchester gallon of Bath water contains.

	oz.	dwt.	gr.
Calcareous earth combined with vitriolic acid in the form of selenite	0	0	319$\frac{1}{16}$
Calcareous earth combined with acidulous gas	0	0	22$\frac{8}{16}$
Marine salt of magnesia . . .	0	0	22$\frac{1}{16}$
Sea salt	0	1	14$\frac{4}{16}$
Iron combined with acidulous gas	0	0	0$\frac{1}{11}$
Acidulous gas, besides that which is contained in the above earth and iron	12	0	0
Atmospheric air	2	0	0

Dr. Monro gives the highest degree of heat attributed to them by

The other public buildings in Bath are the upper and lower assembly rooms. The former, in the immediate vicinity of the circus, was finished in 1791, at the expense of £20,000; the ball room is 105 feet long, forty-three wide, and twenty-two high; one of the card rooms is an octagon, forty-eight feet in diameter, the other is seventy feet by twenty-seven; these, with the tea and coffee rooms, library, billiard room, and other appropriate apartments, form the most superb suite of rooms dedicated to pleasure, in the kingdom. The lower assembly rooms, near the parades, are also very elegantly fitted up, and both are appropriated chiefly to public meetings, promenades, balls, concerts, cards, and other amusements, during the winter and spring seasons. The pump room presents unrivalled attractions; it was built in 1797, is eighty-five feet long, forty-six wide, and thirty-four high; the interior is adorned with columns of the Corinthian order, crowned with a rich entablature In a recess at the west end is a music gallery, and at the other end is a marble statue of Beau Nash; here the company promenade and drink the waters from eight or nine till three, attended by an excellent band of music. The theatre, on the south side of Beaufort-square, was opened in 1805, and in point of size, elegance of structure, and magnificence of decoration, is superior to any provincial theatre. The company of performers have long been esteemed the best out of the metropolis.

Bath, a town of Berkely county, Virginia. It is situated at the foot of a small mountain, known by the name of the Warm Spring mountain. Contiguous are springs much celebrated. The country round is agreeably variegated with hills, and the soil rich and well cultivated. It is thirty-five miles from Winchester, twenty-five from Martinsburg, and 269 from Philadelphia.

Bath, a large mountainous county of Virginia, sixty miles in length, and fifty in breadth. It is bounded on the east by Augusta, on the west by Green-brier county, on the north by Pendleton, and on the south by Botetourt. In this county are two springs remarkable for their medicinal quality. They are called the warm and hot spring, and rise near the foot of Jackson's mountain, but more generally known by the name of the Warm-spring-Mountain. The hot spring, so called from its possessing a greater degree of heat than the warm spring, has frequently been so hot as to have boiled an egg. Some believe its heat to be now diminished. The stream which issues from it is small. A fountain of common water, which rises near its margin, gives it a striking appearance. The warm spring rises about six miles from the former, and issues with a bold stream sufficient to turn a grist mill, and to keep the water of its basin, which is nearly 100 feet in circumference, at the vital warmth. The water is strongest in the hottest weather, which occasions their being visited in the months of July and August. They remove rheumatisms and various other complaints. It rains here four or five days every week.

Bath, a town of the United States, New York, in the county of Steuben, handsomely situated on the east side of the river Conhocton. It contained in 1813, when its trade and population were rapidly increasing, fifty houses and stores, besides the country buildings. The Conhocton is here seventy-five feet wide, and is navigable for boats to the Tioga. It is forty-two miles south-east from Williamsburgh, and 200 north from Philadelphia.

Bath, a small town of Hyde county, North Carolina; situated near a bay which sets north from Tar river, eleven miles east by south of Washington, and sixty-one south by west of Edenton.

Bath, a village in the island of Jamaica, so named from a famous hot spring in its vicinity. The water is sulphureous, and too hot to admit a hand being held in it.

Bath, in Jewish antiquity. Some distinguish five kinds of Hebrew measures so called, viz. the greater bath containing eighty pounds of water, or, according to Josephus, 1440 Roman ounces; the second bath containing 100 ounces; the third, 66⅔ ounces; the fourth containing 25 ounces; and the fifth, 6⅔ ounces of water. Some have estimated the sacred bath at half as much again as the common bath; but there is no sufficient reason for this distinction. The word, in Hebrew, signifies literally a daughter. See Bath-kol.

Bath, in metallurgy, is used to signify the fusion of metallic matter in certain operations. In refining or cupelling, for example, the metals are said to be in bath when they are melted: thus, bath of gold signifies melted antimony when gold is purified in it; and bath of the king is the title given to melted antimony by alchemists, who style gold the king of metals, because gold only can resist the action of antimony.

Bath, Knights of the, a military order of England, concerning the origin of which antiquaries differ. The most probable account is that the ancient Franks and inhabitants of Lower Germany, with whom it is highly probable the Saxons, who invaded England, had the same descent, introduced it, with other customs, upon their settling here. These ancient Franks, when they conferred knighthood, practised bathing amongst other rites, before they performed their vigils; and they were hence denominated Knights of the Bath. Henry IV., on the day of his coronation in the tower of London, conferred the degree upon the forty-six esquires, who had watched all the night before, and had bathed themselves. From that time it was customary with our kings to confer this dignity preceding their coronations, the coronations of their queens, the births and marriages of the royal issue, &c.; several knights of the bath were made at the coronation of king Charles II. in 1661; after which the order was neglected until 1725, when George I. revived it, and ordered a book of statutes for the government of it. By this the number of knights is fixed to thirty-eight, viz. the sovereign, and thirty-seven knights-companions. The apparel of a knight of the bath is a red fur coat, lined and edged with white, girded about with a white girdle, without any ornament thereon; the mantle is of the same color and lining, made fast about the neck with a lace of white silk, having a pair of gloves tyed therein, with tassels of silk and gold at the end; which mantles are adorned upon the left shoulders with the ensign of the order, being three imperial crowns, or, surrounded with the ancient motto of this knighthood, Tria juncta in uno, wrought upon a circle gules, with a glory or rays issuing from the centre, and under it the lace of white silk heretofore worn by the knights of the bath. They have red breeches and stockings, and have white hats, with a plume of white feathers in them. The king allowed the chapel of king Henry VII. to be the chapel of the order; and ordered that each knight's banner, with plates of his arms and styles, should be placed over their several stalls, in like manner as the knights of the garter's in St. George's chapel in the castle of Windsor; and he allowed them supporters to their arms. The dean of Westminster for the time being is dean of the order; the other officers are, bath king at arms, a genealogist, registrar, secretary, gentleman usher, and messenger. These several officers have their particular duties assigned them by the statutes. The office of genealogist is a distinct office of record, in the pedigrees of the knights of the order and their esquires, which are entered in a regular series from 1399, the period at which the order was originally instituted, to the present time.

An esquire of the order is allowed to hunt and fish in the king's royalty, and is exempt not only from serving the office of high sheriff, but any rochial office. To prevent any abuses in the iming these privileges and exemptions, the lowing notification was inserted in the gazette in 03, previously to the installation of twenty-two ights, attended by their esquires, sixty-six in mber.

'It is hereby notified, that no exemplificate ll be issued to any esquire, from his royal ghness the duke of York, after the ensuing tallation, until it shall be certified to his royal ghness, by the genealogist, that the pedigree nd coat armour of the several knights and their espective esquires have been entered in the enealogical books of the order, in obedience to he said statutes. Given at the Horse Guards, his 13th day of May 1803; FREDERICK, acting as reat master of the said most honorable military rder of the bath.'

We need hardly add, that, both in the number of knights and the brilliancy of its appearance, this order maintained its full splendor at the coronation of the fourth sovereign of the House of Brunswick.

BATH METAL is a preparation of copper with zinc, which gives a more beautiful color than the calamine used in the preparation of the common brass. See PRINCE'S METAL.

BATHS, in ancient architecture, buildings of various descriptions erected for the purpose of bathing. Baths made a part of the ancient gymnasia, though they were frequented more for the sake of pleasure than health. The most magnificent among the Romans, were those of Titus, Paulus Æmilius, and Dioclesian, of which there are some ruins still remaining. It is said that at Rome there were 856 public baths. Fabricius adds, that the excessive luxury of the Romans appeared in nothing more visibly than in their baths. Seneca complains, that the baths of ple- ans were filled from silver pumps; and that e freedmen trod on gems. Statius has plea- ntly described one in his poem upon the baths f Claudius Etruscus, the steward of the em- eror Claudius.

> Nil ibi plebeium; nusquam Temesæa videbis
> Æra, sed argento felix propellitur unda,
> Argentoque cadit, labrisque nitentibus instat,
> Delicias mirata suas, et abire recusat.

Macrobius tells us of one Sergius Oratus, a luptuary, who had pendent baths hanging the air. According to Dion, Mæcenas was e first who made a bath at Rome; yet there e instances of public baths prior to this; but ey were of cold water, small, and poorly deco- ted. Agrippa, in his ædilate, built a number baths, where the citizens might be accommo- ted, either with hot or cold water, gratis. ter his example, Nero, Vespasian, Titus, Domi- n, Severus, Gordian, Aurelian, Maximian, Dio- sian, and most of the emperors who studied to n the affections of the people, erected baths l with the richest marble, and wrought accord- g to the rules of the most delicate architecture. e rich had baths at home, and frequently very gnificent ones, especially after the time that practice of pillaging provinces had begun; they only used them on extraordinary occa- ns The great men, and even emperors themselves, sometimes bathed in public with the rest of the people. Alexander Severus was the first who allowed the public baths to be opened in the night during the heats of summer.

Dioclesian is said to have erected baths which would accommodate 1800 bathers. According to Alberti, in the eighth book of his architecture, the extent of an ancient Roman bathing establishment was at least 100,000 square feet. Now, if we consider the great extent of their ruins, the number of their apartments, courts, and halls, which were enclosed and served for recreation and exercise, Alberti does not err on the side of excess. They were generally of a square or oblong form, and surrounded with walls; this space had three enclosures, each of which surrounded the building, as it were, one placed within the other. The first, or what surrounded the exterior, contained the halls in which the philosophers gave their instructions, and those which were used by the athletæ. The second division contained open places, planted with trees, for the exercise of the youths. In the third division, situated in the middle of the building, were the baths, surrounded with porticoes and open courts. Sometimes the entire building was enclosed by a park, like that of Alexander Severus, which contributed greatly to the embellishment of the whole structure.

They were careful to place their public baths in a warm situation; to protect them from the north winds, and expose them to the south or south-west as much as possible, that they might receive heat from the sun during the hours in which the bath was generally used. In the baths of individuals, especially in towns or cities, they sometimes made a distinction between summer and winter baths. In the first, they placed the cold bath towards the north, and in the winter baths, towards the south.

The Greek baths were usually annexed to palestræ or gymnasia, of which they were considered as a part. These baths consisted of seven different apartments, usually separated from each other, and intermixed with other buildings belonging to the other sorts of exercises. These were, first, the cold bath, frigida lavatio; secondly, the olæothesium, or room where they were anointed with oil; thirdly, the frigidarium, or cooling room; fourthly, the propnigeum, or entrance of the hypocaustum, or stove; fifthly, the vaulted room, for sweating in, or vapor bath, called concamerata sudatio, or tepidarium; sixthly, the laconicum, or dry stove; seventhly, the hot bath, called callida lavatio. The baths separate from the palestræ appear to have been usually double, one for men, the other for women; but so near, that the same furnace heated both. The middle part was possessed by a large basin that received water by several pipes, and was surrounded by a balustrade, behind which there was an area for the reception of those who waited to use the bath. They were vaulted over, and only received light from the top. In the Roman baths, the first part that appeared, was a large basin, called *κολυμβηθρα* in Greek, and natatio or piscina in Latin. In the middle was the hypocaustum, which had a row of four apartments on each side, called balnearia; these were the stove, the bath, cold bath, and tepidarium. The two stoves, called laconicum and tepidarium, were circular and joined together. Their floor was hollow and suspended, in order to receive the heat of a large furnace, which was communicated to the stoves through the vacuities of their floor. This furnace also heated another room called vasarium, in which were three large brazen vessels called millaria, respectively containing hot, warm, and cold water; which were so disposed, that the water might be made to pass by syphons and pipes out of one or other of them into the bath, in order to adjust its temperature. The description is given by Vitruvius.

The baths or thermæ of the Romans, as well as the gymnasia of the Greeks, were sumptuously decorated with bassi rilievi, statues and paintings; the basins were of marble, the pavements of mosaic, and the cupolas splendidly decorated. The remains of those at Rome prove, more than any other of their architectural ruins, the love of magnificence and luxury which characterised the ancient Romans; and as the public baths were intended to collect together a great number of people, they were divided into so many various apartments, which afforded their architects an ample field for the display of taste and splendor of ornament. Agrippa ornamented the apartments of his bath with encaustic painting, and covered the walls of the caldarium with slabs of marble, in which were inserted small paintings. In the earlier period of the Roman history, before the arts and luxuries of Greece were much known to, or practised by, the Romans, their baths were small and simple, only calculated for the mere act of bathing, like that of Scipio Africanus, described by Seneca. While the ruins of the baths of Titus, Caracalla, Nero, Dioclesian, and Antoninus, are the most splendid examples of these kinds of buildings, and anciently contained the finest statues that were brought from Greece. The Laocoon was found in the baths of Titus, and the Farnese Hercules in those of Caracalla.

In Italy and the east, baths on a large scale are still constantly seen. Denon, in his Egypt, decribes the hot vapor baths of the countries through which he passed; and in St. Petersburgh, at Florence, and in several European capitals, these are coming much into use.

BATHE (Henry De), a learned knight and justiciary of the thirteenth century, born at Bathe House, in Devonshire, the family seat. In 1238 he was appointed justice of the Common Pleas; and within the succeeding twelve years, an itinerant justice for eight different counties. In 1251 he lost the royal favor, and being accused of accepting bribes, perverting justice, &c. and, above all, of seditiously alienating the affections of his majesty's subjects, Henry III. became so irritated against him, that De Bathe, either from his innocence, or popularity, being acquitted of the crimes laid to his charge, Henry is said to have declared from the throne, that whosoever should kill Henry De Bathe, should have a royal pardon for him and his heirs!—Not long after, however, by the mediation of friends, and the payment of 2000 marks to the king, he was restored to fame, and all his former offices, along with that of justice of the king's bench, which he enjoyed till his death in 1261.

BATHING.

BATHE', Bath', Bath'ing. } Ang.-Sax. *bathian*, Dut. and Ger. *baden*, Swed. *bada*. To wet, to immerse in water or other liquid. A bath, the receptacle of the fluid, in which subjects are covered or immersed, is either hot or cold, either of art or nature. It is also a technical term in chemistry.

The sleer of himself yet saw I there,
His herte-blood hath *bathed* all his here.
Chaucer. The Knightes Tale.

Quod he,
Brenne hire right in a *bath* with flames rede,
And as he bade right so was don the dede,
For in a *bathe* they gonne hire fast shetten,
And night and day gret fire they under batten.
Id. Second Nonnes Tale.

And whilst he slept she over him would spred
Her mantle, colour'd like the starry skyes,
And her soft arme lay underneath his hed,
And with ambrosiall kisses *bathe* his eyes. *Spenser.*

Except they meant to *bathe* in reeking wounds,
I cannot tell. *Shakspeare. Macbeth.*

Sleep,
The birth of each day's life, sore labour's *bath*,
Balm of hurt minds. *Id.*

Thereupon, belike, this humour of melancholy is called balneum diaboli, the devil's *bath*; the devil spying his opportunity of such humours, drives them many times to despair, fury, rage, &c. mingling himself among these humours.
Burton's Anatomy of Melancholy.

But lo! the day is ended with my song,
And sporting *bathes* with that fair ocean maid.
Fletcher. Purple Island.

Others on silver lakes and rivers *bath'd*
Their downy breast; the swan, with arched neck,
Between her white wings mantling proudly, rows
Her state with oary feet. *Milton.*

Mars could in mutual blood the centaurs *bathe*,
And Jove himself give way to Cynthia's wrath.
Dryden.

She rear'd her arm, and with her sceptre struck
The yawning cliff from its disparted height;
Adown the mount the gushing torrents ran,
And cheer'd the vallies; there the heav'nly mother
Bath'd, mighty king, thy tender limbs.
Prior. First Hymn of Callim.

Queen lilies: and ye painted populace,
Who dwell in fields, and lead ambrosial lives;
In morn and ev'ning dew, your beauties *bathe*,
And drink the sun. *Young.*

Constantine survived that solemn festival about ten months; and, at the mature age of sixty-four, after a short illness, he ended his memorable life at the palace of Aquyrion, in the suburbs of Nicomedia, whither he had retired for the benefit of the air, and with the hope of recruiting his exhausted strength by the use of the warm *bath*. *Gibbon.*

Bathing, for medicinal or salutary purposes, demands consideration under several distinct heads; in the first place, as the temperature of the bath may be concerned: thus we have cold, hot, and tepid or temperate baths. Secondly, as the mode may vary in the application of the media employed; for immersing the body, pouring water over the whole, or part of its surface, the use of sponges or cloths to the naked body, immersing the body in or exposing it to vapor, and letting water fall from a greater or less height upon the head and shoulders, are, in fact, all varieties of bathing. We have, thirdly, also to consider the question of specific qualities in the agencies employed; some substances, as we shall see in the sequel, being used for the impregnation of baths which are supposed to operate with positive powers of a medicinal kind. And, lastly, it may be remarked, that the material itself varies beyond the circumstance of temperature or peculiar quality; for besides water and vapor, air and earth have been brought into requisition as subservient to the purposes for which the practice of bathing was instituted.

The term Cold Bath is generally made to include the whole range of temperature, from a little above thirty-two to eighty degrees of Fahrenheit's thermometer; by sudden immersion in water, of this low temperature, the whole surface becomes contracted, the bulbs of the hair, as a modern author states, are made conspicuous, and the skin, resembling that of a newly picked goose, has been styled cutis anserina. The debility and tremor are considerable, a sense of weight is felt in the head, the respiration is quick and laborious. These appearances are followed by a very different series. A glow soon returns to the surface, the weight in the head is almost instantaneously relieved, and every function appears to be carried on with increased activity. If a person stays for a longer period in the bath, the glow will be slighter and will soon disappear, while every previous symptom of debility will return and continue.

If this immersion be repeated at due intervals, and the stay in the bath be not improperly continued, the general health and spirits are greatly improved, the different necessary evacuations properly carried on and supported, and the body and mind appear to act with increased vigor.

The explanation of these phenomena, says the author from whom we extract, is not difficult: the cold, by its sedative powers, represses the circulation in the extreme vessels, and the fluids are accumulated in the larger arteries and veins: and he goes on to state, that re-action is set up to produce the subsequent glow; this after-glow, however, and indeed the immediate impression of the cold water, are probably more complicated operations than those persons imagine who readily receive the explication of the circumstances as referrible to a sort of mechanical action and re-action. The cold plunge seems to affect not merely by directing the blood inwardly upon the large blood-vessels and viscera, but there may be a constringing agency produced through the whole series of capillary vessels; and the consequent diminution of the capacity of these vessels, or of their diameter, must, as is well remarked by another writer on the subject, necessarily increase that part of the resistance to the blood's motion which is derived from its friction against the sides of the vessels, and must therefore tend materially to lessen its velocity. He might have added, that, upon this principle, the generation of cold, or rather the subduction of the sensation of heat is probably in a greater measure than would be the consequence of the mere cold immersion, had not this mode of applying cold some constringing as well as mere sedative power; this term sedative, we may here incidentally remark, has been employed by physiological and pathological writers with too much laxity of signification.

In considering the phenomena directly and indirectly produced by cold bathing, reference ought likewise to be had to the sensations; for it will be found that both the first and subsequent effects are very materially regulated, both as to their degree and duration, by the condition of the percipient power. That sensation has a great deal to do, both with the principle of its operation and the salutary or injurious effects of cold bathing, has been shown with a great deal of ingenuity by the late Dr. Currie, in his experiments on cold water as a febrifuge power; and that the glow which succeeds to the first sensation of cold, may be ascribed in a great measure to the increased sensibility of the nerves after a partial torpor, cannot be denied. At the same time it must be admitted, that there is not only a relative but an actual increase of heat on the surface of the body, during the re-action following the temporary torpor; and it is probable, we are told, the causes concerned in the production of animal heat are called up into a more vigorous exertion in a strong constitution, whenever they are required for the purposes of life; so that they at first supply the superficial parts of the body, during the immersion, with as much heat as is necessary to overcome the painful sensation of cold; and afterwards, by a continuation of the same action, occasion an actual elevation of temperature above the natural standard.

It is worthy of remark, that re-action, as it is called, or heat following exposure to cold water, sometimes occurs, even when there has been no prior depression of temperature. Dr. Currie found that during the affusion of a bucket of cold salt water on the heads and whole bodies of two healthy persons, no depression of temperature was observable; but, in a minute or two afterwards, although they remained without motion, the mercury rose two degrees; and in a third person, of feebler constitution, although the temperature remained equally unchanged during the affusion, it sunk in a minute after, half a degree. These effects seem to be almost entirely independent of any change in the state of the circulation, which must be rather retarded than accelerated, while the generation of heat is increased. It is true that the heart might be called into more powerful action at the same time that the pulsation of the wrist became feeble, from the permanent contraction of the radial artery; but the action of the heart would still be exhibited by the carotids, undisguised by this modification; and the carotids have not been observed to beat more strongly in the cold bath than at other times, although Dr. Currie has remarked, that when the pulse could hardly be felt at the wrist, the heart pulsated with great steadiness and due force.

Much, it must be confessed, is wanting in the way of physiological experiment before we can satisfactorily explain the laws of temperature of the human body, or the vascular changes that are concomitant with, or perhaps in some measure the causes of, these changes; and indeed it is not easy to say precisely upon what principles cold bathing, when it proves a sanative or salutary process, operates the beneficial purpose: *a priori*, we should scarcely have supposed that a temporary suspension, to be followed by excitation, that excitation itself proving but transient, would have been attended with much benefit to the constitution; and yet we do see that much and unequivocal good occasionally, nay frequently, follows the temperate and judicious employment of the agent now under consideration. Much mischief is also the result of its indiscriminate or injudicious use, and we shall now proceed to point out in what cases and circumstances cold bathing is desirable or admissible; where it is contra-indicated; and in what mode it is best administered.

It has already been intimated that cold bathing may be used with advantage under certain modifications of febrile heat; it is, however, of the utmost importance to attend to certain precautions which its use demands, when employed as a febrifuge. Dr. Currie tells us that cold bathing or affusion, in fever, can only then be had recourse to with safety and good effect, when the heat of the body is steadily above the natural standard, when there is no sense of chilliness, and especially when there is no general nor profuse perspiration. If used during the cold stage of fever, even though the heat be higher than natural, it brings on interruption of respiration, a fluttering, weak, and extremely quick pulse, and certainly might be carried so far as to extinguish animation entirely. (See MEDICINE, article FEVER, &c).

In another affection, very opposite to fever, viz. tetanus, cold bathing has been used with decidedly beneficial effect; and, in this case, it may be remarked that the principle of its operation must be different; the shock given to the sensations, and the whole order of organic movements, being temporarily changed, having more seemingly to do with its healing influence than any circumstances abstractedly connected with change of temperature. The observation is as old as Hippocrates, that the remedy under remark is best adapted to these convulsive disorders when they are the result rather of general mobility of a morbid kind, than connected with local affection; *ανευ ελκεος* is the expression of the Coan sage, and we allude to it partly because it is confirmatory of what we are immediately to advance on the objectionable circumstances to cold bathing in other complaints and tendencies.

But it will not be requisite or proper in this article (which is intended rather for popular than for professional direction), to go through the various disorders in nosological order, for which the practice of cold bathing has been instituted; suffice it to say, that it has generally been used and recommended in those conditions of fibrous debility which are under the grade of actual disease, and in which those medicinal agencies are demanded which pass under the name of tonic. Such states are marked by irregularities in the displays of nervous power, by tremors, by more than natural sensibility to cold, by the easy excitation of profuse discharges from the skin, by head-aches, listlessness, and febricula, with lowness of spirits, irregular appetite, deficient digestion, and torpid bowels. Individuals, in this condition of the nervous and muscular powers, may be greatly benefited by the daily employment of cold water to the surface, in the manner immediately to be pointed out.

But it may be right first to dismiss the much agitated and very interesting question respecting the propriety of bathing or washing children; and this, perhaps, will be best done by extracting from a modern writer on consumption. 'Immersion in cold water,' says Dr. Reid, 'during the period of infancy, has been very generally recommended, and too frequently had recourse to in an indiscriminate manner, to preserve health and insure hardiness. The author has remarked several instances where sensible and sometimes serious injury has arisen from neglecting to observe the precautions necessary to regulate the employment of this important agent in very early years. In infancy, danger to the lungs from cold bathing has been stated to exist in a very inferior degree; and by the practice of dipping infants in cold water, susceptibility to the injurious impression of cold in succeeding years has been thought to be materially diminished. This principle, in the abstract, is undoubtedly correct; and, with the exception and precautions now to be mentioned, may be pursued with propriety and advantage. Two infants may be supposed of one family, with reverse constitutions; in the one, a general torpor, debility, and great susceptibility to the impression of cold shall prevail; in the other, comparative vigor, activity, and warmth. To pursue, without discrimination, the same course with respect to immersion in water with each of these children, would be obviously improper. That degree of cold which would refresh and invigorate the one, would confirm debility, and augment torpor, in the other. A bath which is not cold to the sensations must, in the first instance, at least, be resorted to for the weaker infant; and in neither case should immersion in cold water be practised when the external temperature of the body is inferior in degree to its general standard, when after immersion the body appears to be chilled, or when returning heat is attended with febrile languor, instead of the grateful and genial warmth characteristic of the appropriate action of exciting powers. If the practice of immersion be guided by a cautious observance of these particulars, it may be pursued with safety, and will be attended with success; but a total neglect of bathing were greatly preferable to the severe and

us manner in which infants are frequently
to these violent and rapid changes in
ture.'

may further remark, that, both in the
f infancy and youth, cold bathing must
iously, and only under professional per-
, employed, when the constitution is de-
of a scrofulous cast; and more especially
with that general condition of the organi-
to which the term scrofula would be
, tendencies manifest themselves of local
al disorder. Under the somewhat me-
notion of hardening the frame, as some
te bodies are hardened by being plunged
media, cold bathing has been employed,
severed in, to a deleterious extent; and
he circumstances of consumptive disposi-
verging towards any internal or visceral
, the shock, and irregular impulses, and
rushes, if we may so say, which the
t plunges into cold water imply, instead
gthening, irritate the feeble frame, and
e constitutional bias towards structural
emediable disorder. Dr. Beddoes pre-
n important and instructive example of
nciple and practice, on the authority of
Dr. Pulteney. 'T. C. was *rickety in his*
and very weakly for several years after.
winter of 1759 he had pleuretic symp-
a rheumatic fever left him next summer
with chronic rheumatism; he was ad-
go into the cold bath; he did so; but on
out again felt such an increased load,
, and anxiety, about the precordia, that
ght he should hardly recover the shock it
m. Nevertheless he ventured in again a
two afterwards, but experienced the for-
mptoms in an aggravated degree, and
is time dated the disorder that terminated

nischievous mistakes have occasionally
n the practice of cold bathing, from too
ly considering it a tonic or strengthening
, so much error has connected itself with
de and circumstances of immersion. It
n too generally considered that to be fitted
ersion, the body should be cooled down
to the temperature of the bath, than after
exercise it is made; and that if a person
rried to the side of the water into which
out to plunge, he ought to rest until part
rtificial heat he has produced from exercise,
pated in the surrounding air. This is an
us motion, which Dr. Currie was the first
refute and rectify; it is singular how
ld have arisen, since our own feelings, as
our observation on the instinct of animals,
direct to a different conclusion and prac-
The opposite doctrine, too, was taught by
ents. 'When we are fatigued or dried
exercise (says Galen, as quoted by Dr.
) the bath restores us to comfort, and defends
n fevers. A strong young man in the
will plunge into cold water at once,
eated, and be much refreshed by it. Ani-
so, wash themselves when they are hot, by
al instinct, as they eat when they are hun-
d seek warmth when they are cold. In
if we had sufficient powers of discrimination, we might probably sometimes derive material advantage from the use of the cold bath, without premising the hot; and some persons have been actually benefited by this remedy. But without a more intimate knowledge of diseases than we possess, we cannot generally venture on the practice; and least of all in hectic fevers, where there is not strength enough to bear the shock. A stout young man having a fever in warm weather, without visceral inflammation, would, bring on a salutary prespiration by bathing in cold water; and if he were in the habit of cold bathing, he might have recourse to it with more confidence; but for hectic, it is unsafe, especially where there is much emaciation; thus in a hot and dry summer, those who have travelled far, and are become thin and weak, have no need of being cooled, nor would it be safe for them to use the cold bath, without first going into the warm. For we seem to be hardened by the cold bath, like iron when heated first; and if we previously warm ourselves by exercise, the effect is the same.'

We have extracted these observations of Galen, because their practical inference is precisely the same, as that to which the good sense and philosophic acumen of Dr. Currie have brought us; and because they are strongly contrasted with the vulgar conceit, which, almost universally, and still too generally, prevails. It is well observed by the writer from whom we now borrow (see supplement to the Encyclopædia Britannica), that Dr. Currie's relation, of an adventure of his own, might almost be supposed to have been intended as a commentary on these remarks of Galen. 'On the first of September, 1778, two students of medicine at Edinburgh, set out on foot on a journey, a considerable part of which lay along one of the rivers of Scotland. They started by sun-rise, and proceeded with alacrity in the cool of the morning. At the end of eight miles they breakfasted, rested for an hour, and then resumed their journey. The day grew warm as it advanced, and after a march of eight miles more, they arrived heated, but not fatigued, on the banks of the river above mentioned, about eleven in the forenoon. Urged by the fervor of the day, and tempted by the beauty of the stream, they stripped instantly and threw themselves into the river. The utmost refreshment followed, and when they retired to a neighbouring inn, this was succeeded by a disposition to sleep, which was indulged. In the afternoon they proceeded, and travelling sixteen miles further, at a single stretch, arrived at the inn where they were to sleep a little after sunset. The afternoon had been warm, and they perspired profusely; but the evening was temperate and rather cool. They had travelled for some miles slowly, and arrived at the end of their journey, stiffened and wearied with exercise. The refreshment which they had experienced in the morning from bathing induced, however, one of them to repeat the experiment, and he went perfectly cool into the same river, expecting to relax his limbs in the water, and afterwards to enjoy profound sleep. The consequences were very different. The Tweed, which was so refreshing in the morning, now felt extremely cold, and he left the water hastily. No genial glow succeeded, but a feverish chill remained for some time, with a small frequent pulse, and flying pains over the body. Warm liquids, and frictions at length brought on considerable heat, and towards morning, perspiration and sleep followed. Next day, about noon, they proceeded on foot, but the traveller who had bathed was extremely feeble; and though they had to perform a journey of a single stage only, as some part of it was difficult and mountainous, he was obliged to take the assistance of a carriage, which overtook them on the road. It was several days before he recovered his usual vigor.'

It is generally known that the Russian goes reeking from a bath, heated almost to the highest pitch of endurance, and immediately, without staying to cool himself, rolls his naked body in snow: and the experiments made some time since by Fordyce and Blagden prove that a rapid transition from high heat to cold may, under some circumstances, be made with the utmost safety. So erroneous is the notion we are now combating, that the body requires to be cooled in order to render it fit for a chilling medium. Still, there are certain facts connected with the action of cold and heat on the living system, which prove that we must not take too precipitately, or in too unqualified a manner, the reverse rule for our guide through all circumstances. As an example, says a modern writer, of the injurious tendency of a precipitate application of cold when the body is heated, in a more than ordinary degree, the sufferings of the Macedonian conqueror, from plunging into the river Cydnus, have frequently been adduced. Dr. Currie, however, has endeavoured to prove, that the situation of Alexander, previously to bathing, was different from that more commonly imagined; and that his subsequent illness, as related by his historian, is referrible to circumstances exactly opposite to those to which they are generally attributed. From the length and difficulty of the march, it is natural to suppose that he must have been cooled as well as debilitated, by excessive perspiration and fatigue; and under such circumstances, immersion in the cold and rapid Cydnus was followed by the consequences which we should expect from the principles already laid down.

Other circumstances, however, have been arrayed as evidences against the propriety and safety of a sudden application of cold subsequently to violent heat. Many well attested instances are on record, of instantaneous death, or violent disorders, which have terminated fatally, following imprudent exposure to cold, while the body has been overheated; and in some of these, the application of the noxious cause has confessedly been made previously to the production of fatigue or coldness. It is by no means uncommon for violent inflammation of the stomach or lungs to be occasioned by large draughts of cold water, incautiously taken to abate thirst, consequent upon excessive heat; and the injurious effects of the external application of cold water, both to the whole surface, and merely to a part of the body, have been circumstantially related, in order to invalidate or qualify the inferences of Dr. Currie.

These apparently contradictory deductions, (says Reid), on this very interesting subject, may perhaps be in some measure reconciled by the following considerations:—

The state of the body, in relation to its susceptibility of being acted on by cold media, has more reference to the kind than degree of previously existing heat; or, more correctly speaking, although an equal quantity of heat may be present in the system, such heat may be abstracted with greater or less facility and safety, according to the mode in which it has been generated. The increase of temperature occasioned by what is termed an inflammatory action pervading the whole system, such as is sometimes observed in violent inflammation of the lungs; that attended with an extremely debilitated state of the vital power, as in instances of what has been termed improperly putrid fever; the heat consequent upon violent exercise, and that produced by communication from without, as in the example of hot baths, or exposures to other sources of great heat, while the body continues inactive; are all essentially different in their nature: and, although in each case the quantity may be equal, and the thermometer applied to any part of the body shall indicate the same temperature, yet from such temperature alone it would be improper to form a judgment of the expediency and safety of the sudden application of cold. In the author's recollection a case occurred, of violent inflammation of the whole thoracic viscera, which speedily terminated in death, almost immediately following a large draught of cold water, when the body had been heated from unusual exercise. The deceased was previously to the event a strong and healthy man, in the prime and vigor of life. In this case the injury appeared to arise, not from the sudden abstraction of heat, but from the precipitate interruption of those actions by which the increase of temperature had been generated. Had the same quantity of water equally cold been suddenly swallowed by a person oppressed and debilitated by febrile heat and irritation, these fatal consequences would not have succeeded, because in this latter case the cold fluid would have operated in deducting from the superfluous quantity of generated and oppressive heat, and the refreshing sensation excited in consequence would have stimulated the languid frame. The same principle likewise applies in the application of cold media, either partial or general, to the external surface. Dr. Beddoes relates the case of an obstinate eruptive affection being produced on the face, in consequence of the immersion of that part in cold water, when the subject of the affection was heated and thrown into perspiration by play. Had this immersion immediately succeeded to hot bathing, or been made during the existence of dry febrile heat, the injurious effects would not have resulted; for this reason, that the action of the cutaneous vessels would not in the latter cases have been injuriously interrupted, and thus indirectly stimulated to inordinate excitement.

The seeming contrarieties of speculation on the subject of temperature, may, perhaps, likewise, in some measure, have arisen from the very important circumstances of cooling application ting through successive moments, or by succes- ve quantities. If a person in a heated state rink half a pint of cool liquid, that may not nsibly reduce him below the natural healthy ate. But if he pour down double that quantity once, the last half pint may be regarded as perating upon the system reduced by the first, d sinking into a dangerous chilliness. So im- ersion for a moment in a sunny river may rengthen and refresh, as many pedestrian avellers have experienced; whereas delay in e water would be attended with great hazard, account of the continued operation of a heat- stracting medium upon a system sufficiently duced in its temperature and action by the st plunge. Whatever might have been the tual condition of Alexander, when he plunged to the Cydnus, the injurious effects of his thing unquestionably originated from the sud- n reduction of heat below the standard of alth. 'Vixque ingressi subito horrore artus gore ceperunt: pallor deinde suffusus est, et tum propemodum corpus vitalis calor reli- uit.' In this case, perhaps, an exposure to cool r, or immersion in water of a superior tempera- re, but which would nevertheless have abstract- a certain degree of heat from the languid ame, would have displayed effects exactly con- ary to what the historian here relates. In like anner, the Russian, who reeking from his por bagnio, immediately rolls in snow; or, ho, after immersion in a bath which has been ated almost beyond endurance, instantaneously lunges into contiguous cold water, requires at the medium to which he is first exposed be xtremely great, or the succeeding cold appli- tion would debilitate, and perhaps destroy. pon this principle, likewise, the statement of r. Fordyce is explained, that a person passing m a violent degree of heat to much cold, will adually return to his proper standard of tem- erature, while from a sudden change from heat cold, when the heat has not been so high, iseases will often be generated.

To revert to the subject more especially under ur present consideration, we may remark, that old bathing will in general be found applicable those conditions of nervous and muscular las- tude and weakness, in which, though the powers the system are thus below their due grade, ere is sufficient energy to insure a healthy -action; while its use is objectionable and fear- l, where local and especially visceral irritation a vascular kind accompanies the general de- ility; and this condition of the frame, it is right remark, is of more common occurrence than sometimes suspected; the topical affection ften being masked, as it were, or concealed nder the systematic weakness; and the detection that something which is thus preying upon the itals requiring frequently the nicest tact, and ost extended experience. It will have been marked, that the two highest of the ancient uthorities in medicine, speak of local and hectic rcumstances as contra-indicating the propriety cold immersion; and it will be recollected, at we gave a case in point, as substantiating e propriety of these cautions—cautions, how- ver, which on the other hand, must not be conceived and acted upon with too much nicety, lest we lose sight altogether of radical weakness; and fear to stimulate and excite, where excitation may prove abundantly serviceable.

In regard to the mode and times of using the cold bath, the following directions, taken from Dr. Willich, may be worthy attention. '1st, Every cold bath applied to the whole body ought to be of short duration; all depends upon the first impression the cold makes on the skin and nerves, it being this impression which hardens us against the effects of rough and cold weather. 2d, The head should be always first wetted, either by immersion, by pouring water upon it, or the application of wet cloths, and then plunging over head into the bath. 3d, The immersion ought always to be sudden; not only because it is less felt than when we enter the bath slowly and timorously, but likewise because the effect of the first impression is uniform all over the body, and the blood in this manner is not propelled from the lower to the upper parts. Hence the shower bath possesses great advantages, as it pours the water suddenly upon the whole body, and thus in the most perfect manner fulfils the three rules above specified. 4th, The due temperature of the cold bath can only be ascertained in relation to individual cases, as it extends from 33° to 56° of Fahrenheit, except in partial bathings, where the degree of cold may, and often ought to be, increased by ice, nitre, alum, salt, sal-ammoniac, or other artificial means. 5th, Gentle exercise ought to precede the cold bath, to produce some re-action of the vascular system upon entering it; for neither complete rest nor violent exercise is proper, previously to the use of this remedy. 6th, The morning or forenoon is the most proper time for cold bathing, unless it be in a river; then the afternoon or towards the evening, when the water has been warmed by the sun, and the dinner has been digested, are the most eligible periods of the day; a light breakfast will not be detrimental before using the bath. 7th, While in the water we should not remain inactive, but move about in order to promote the circulation of the blood from the centre of the body to the extremities. 8th, After immersion, the whole body ought to be wiped as quickly as possible, with a dry and somewhat rough cloth. Moderate exercise out of doors, if convenient, is proper, and indeed necessary.'

We now proceed to the consideration of *hot or warm bathing*, from the temperature of ninety to above a hundred degrees, about which much of what is erroneous in theory has also been conceived. As cold immersion was supposed to harden, by constringing and contracting the fibres of the body, so has it been thought that immersion in warm water would tend to soften and relax the material fabric of which the frame is made up. That there may be something of foundation, in fact, for these notions, we would not *in toto* deny; but it seems more consistent with the laws that govern organised existence to refer the effects to excitation, directly or indirectly induced, than to imagine the fibres of the body capable, or rather susceptible, of those mutations that take place in inanimate matter;

and, in point of fact, we find that some individual or individuals in some circumstances, after a reiterated use of warm or hot water to the whole or part of the body's surface, shall be rendered firmer and more robust than they were prior to the employment of this relaxing agency.

Another effect has also been attributed to the use of hot water, or vapor, as a bath, about which there is some reason also to doubt the full legitimacy of the inferences that have been deduced: viz. its expanding or rarefying qualities, displayed upon the fluids of the body, more especially upon the blood; and some writers have reasoned upon the operation of the hot bath from beginning to end under this assumption; we are told, however, by experimenters, that the blood is very little expansible by heat under any circumstances; and it has been observed, that the mean temperature of all the fluids of the body is seldom elevated more than a degree or two by a bath of any kind; and even if the elevation were ten degrees, the expansion of all the circulating fluids would not exceed the bulk of a single additional ounce of blood or of water. So that to a certain sort of stimulation, rather than to mechanical or chemical impulse, are we to attribute the internal changes that occur in the fluids and solids of the body, from alterations of exterior temperature. That these changes to some extent do occur, is, however, pretty certain; and the swelling of the veins, with, indeed, the temporary increase of bulk in the feet, when immersed in hot water, would seem attributable either to an entrance of some of the fluid from without in among the fluids of the body (the possibility of which, as we shall immediately see, is questioned), or to an altered state of the fluids and secretions, and perhaps of the solids, induced by a modification and mixture of exciting and expanding agency; which, in our present state of knowledge respecting the laws and limits of vital forces in their contest with inanimate matter, would appear not sufficiently explained.

In observing upon the conditions of the body in which warm bathing is likely to prove salutary on the one hand, or is open to objections on the other, it may be remarked, that some of the circumstances which render cold bathing fearful, cause warm bathing to be objectionable likewise. Thus, in apoplectic fulness, in tendencies to hæmorrhage from the lungs, or from the head, in some species of asthma, and in many of the disorders ranged under the division of phlegmasiæ by systematic writers, we should equally avoid both the hot and cold bath; and were the old doctrines of reaction and expansion permitted to explain our objections, we should say that, in the first case, rarefaction of fluids and consequent distension of vessel constituted the points of objection; while in the other, the rush of fluids into vessels already in a condition of over excitement rendered the practise dangerous; and to some extent, it does, we repeat, appear to us, in spite of modern refinements in theory, that we should be correct in our reasoning.

There is one curious circumstance connected with the effects of warm bathing upon the system, which is, that it may, by proper management, be brought to reduce the inordinate heat of fever; and Dr. Currie has particularly recommended it with this view, in cases where objections might lie against the employment of cold water for the same purpose; the possession of this property and influence may be taken in full proof that much remains still to be explained on the subject of living temperature; it should be observed that the effect in question is often operated without reference to perspiration, or at least before perspiration appears externally upon the body; and Dr. Currie has proposed an ingenious explanation of the fact, by suggesting whether the secretion of the perspirable fluid, before it is poured out upon the surface, may not occasion an absorption of heat and consequent reduction of temperature, by the greater capacity that the matter of perspiration has for heat than the blood had from which it was formed. See TEMPERATURE (*Animal*), and PHYSIOLOGY.

From the mode and kind of excitation which warm bathing produces, it might be supposed that chronic rheumatism, that old-standing affections of a paralytic kind, that contracted limbs from arthritic disorders, that spasms and obstructions in the bowels, that many maladies which implicate the nervous organisation without producing plenitude of vessels, and that morbid conditions of the external surface, whether of the skin merely, or whether the cutaneous affection have had to do with the state of internal membranes and visceral derangement, would materially be benefited by its judicious employment—and this we find to be the case. In several of the functional disturbances that are incident to children, arising from the extreme mobility of the frame common to the infantile period of existence, warm bathing, by equalising the circulation, and determining, as it is expressed, to the surface, often proves conspicuously, and very speedily serviceable; but in instances of the occurrence of disorder, whether croupal, convulsive, or intestinal, it is often necessary to premise purging or blood-letting, especially should the child be of a full habit, otherwise the stimulating, and, if we may be permitted to say so, expanding power of the heated water might tend to the production of vascular plenitude to a dangerous excess. It must be allowed that the tendency of warm bathing to occasion copious perspiration is calculated, in some measure, to obviate the objection now preferred against its indiscriminate use; but then the mischief is sometimes done before the system shall have been thus relieved; and we have ventured upon this intimation, because we think, in the general way, too little regard is given in domestic medicine to the circumstances calculated at once to promote the efficacy and insure the safety of the measure under consideration.

Without reference to actual or positive disease, it may be stated, generally, that warm bathing is serviceable in those low conditions of the nervous and vascular and muscular energy, in which the same use of cold water would prove rather injurious than useful; it is a common and occasionally a good practice, to premise its employment when it is eventually intended that the individual shall go into the cold bath; to stimulus of the former being of such kind and extent as to insure against the hurtful tendency of the latter; and the good which results from this method would prove that the idea is erroneous, which supposes an individual more liable to take cold, as it is called, while using the warm bath than when not subjected to these changes of temperature. The ancients were in the practice of gradual transition from the hot bath or caldarium, to the tepidarium or cooler, and thence to the frigidarium or cold; but if there be any correctness in the principles above propounded, respecting the innoxious nature of cold immediately upon heat, these precautions in reference to successive temperatures, were unnecessary; and, indeed, in some cases might be worse than useless.

With respect to the tepid bath very little need be said on the present occasion, since water from eighty to ninety degrees is very seldom employed except as a mere abluent; unless, indeed, in those instances of natural or artificial waters which are impregnated with substances that are conceived to have a specific agency of a medical nature. In some disorders of the skin, indeed, and in other chronic ailments, tepid bathing may occasionally be advisable when circumstances forbid the employment of water of either a very low or very high temperature.

The modes of using cold water are, first, by plunging, which is the best calculated, perhaps, to insure all the good of bathing; secondly, by affusion, or pouring water over the head and neck, which is especially applicable to those states of nervous weakness, and vascular fulness and head-disorder, in which the common bath might be objectionable; and, thirdly, by sponging the whole surface of the body immediately upon rising from bed; which last practice may, in the case of most individuals, be pursued with safety and convenience. The writer of these remarks, since he has been accustomed to daily ablution in this way, has found himself much less liable to catarrhal disorder than before; and it may be observed, that he tried, some years since, cold bathing by immersion, without the same agreeable or salutary consequences; but part of this difference of effect he is disposed to attribute to a recent improvement in constitutional energy, which would probably insure, at the present time, more steady re-action, and better general effect than formerly followed immersion.

BATHS WITH MEDICINAL IMPREGNATIONS.

In the article WATERS, we purpose to enter into a somewhat lengthened detail on the virtues that have been ascribed to the several medicinal springs that are resorted to by the invalid, and which are used as remedies, some in the way of internal administration, exclusively, others both externally and internally. We mean here principally to confine ourselves to one or two remarks, bearing upon the much agitated and still unsettled question, respecting the degree of efficacy that may be expected to attend immersing the body in water, containing particular impregnation, or applying such water in any manner to the external surface.

This question involves in it the very interesting one of cutaneous absorption, as it has been called; in other words, the enquiry, whether, while the outer skin be whole and entire, any substances, however subtle, can be made to penetrate through it; it must, however, be recollected, that the negativing of this proposition would not imply the denial of all influence from exterior applications, since the materials used may be of such a stimulating or irritating quality as to produce a sort of abrasion of the scarf or outer covering; and since some of them being of a volatile kind, and surrounding the subject of the experiment with their fumes, the lungs may be the media through which the whole system may become impregnated with their qualities.

Now several authors, who have written on the subject of bathing, have all along assumed the permeability of the outer skin to the water employed; and one of them, Dr. Marcard, states that the sufferings of Tantalus will not be rated very highly by the naturalist. We have already said that the bulk of a limb, which is immersed in hot-water, is for a time augmented; and this has been attributed by those who reason on the supposition of cutaneous inhalation, or imbibing, to the actual penetration, through the skin, of some portion of the fluid. Many experiments, however, have been instituted, which seem to prove that there is some fallacy in this conclusion, and that the weight of the whole body is not at all added to by total immersion, for some length of time, in water even of a high temperature.

Seguin, Rousseau, Currie, and others, have pursued a series of experiments, to which more particular allusion will be made in the article PHYSIOLOGY; and from which they infer, that, while the skin is uninterfered with, either by mechanical pressure or by actual abrasion, no matter whatever, solid or fluid, medicinal or otherwise, can be received from without, the scarf skin being impenetrable to the most subtle material; in the words of Dr. Currie, 'though the exhalants of the skin pierce the epidermis (scarf skin), and come in contact with the external air, the mouths of the absorbents terminate under it, and are covered by it; and while it remains unirritated and entire, no absorption of solid, liquid, or aeriform elastic fluid takes place on the surface. In the instances,' he adds, 'that are supposed to favor the contrary opinion, it will be found that the article absorbed is forced through the epidermis by mechanical pressure; or that the epidermis has been previously destroyed by injury or disease; or, if sound, that the article applied to it is of an acrid nature, which first irritates and erodes this tegument, and then, coming in contact with the mouths of the lymphatics under it, is of course absorbed. Seguin's words, expressive of this fact and principle, are equally decided and forcible: 'The epidermis is a barrier which no kind of virus (and he includes all internal matters) can pass while that tissue is in a sound state and perfectly whole; nor can they be absorbed by the skin.'

For a more detailed discussion of this interesting topic we must refer, as above intimated, to the article PHYSIOLOGY. Under the word MEDIcine, too, facts in support of, and against the doctrine of cutaneous inhalation will call for notice and comment; we must here limit ourselves to stating that the anti-absorptionists have at least proved a great deal, so much so, that it may be very fairly doubted whether inferences respecting impregnations of the system by baths have not been deduced too hastily and empirically. But, on the other hand, it cannot be doubted that there are substances employed which have the power of forcibly permeating the outer skin by their irritating and eroding quality; and are in this way either actually absorbed into the system generally, or by the sympathy which the true skin constantly keeps up with internal organs; the influence of the remedy may in this manner be transmitted to the interior without any actual conveyance of matter. There is still another way in which medicinal substances may act upon the frame without being actually received into it, viz. either by corrugating and strengthening, or relaxing and mollifying the fibres of the body; thus, chalybeate may be more tonic than common water, by the tonic influence it exerts exteriorly. From what we have already advanced, however, in another part of the present paper, it will be understood that this principle of agency is of somewhat equivocal admission; and that it is at any rate much modified and limited by the laws of life.

It will not be proper to dismiss this part of our investigation without adverting to one particular mode of exciting interior movements, through the medium of exterior medicinals, viz. by the use of mineral acids applied to the surface of the body; which, whether they act through the medium of the absorbing power, or whether their agency be effected by means of the nervous system, and that sympathetic relation which we have already stated the skin maintains with internal parts; certain it is that they do display an influence upon the frame which gives them a fair claim of admission into the catalogue of therapeutic agents. From Dr. Good's recently published volumes, entitled the Study of Medicine, we shall extract an account of the bath to which we now refer.

'There is yet another remedy,' says Dr. G. 'for affections of the biliary organs, &c. which of late years has excited great attention, and is now surmounting an ungenerous prejudice that was at first very extensively directed against it—and that is the diluted aqua regia bath, invented by Dr. Scott of Russell Square. For nearly thirty years he has been in the habit of using this preparation, and has tried it in almost every variety of strengths, and almost every variety of proportions which the two acids that enter into the composition may be made to bear to each other. He commenced his experiments in India, where, on account of the greater degree of torpitude the liver is apt to acquire than in more temperate climates, he was in the habit of forming his bath stronger, and making it deeper than he has found it proper to do in our own country; and where, upwards of twenty years ago, he plunged the duke of Wellington into one up to his chin, for a severe hepatic affection he was then laboring under, and thus restored him to health in a short time.'

In England it is not often that he finds it necessary to raise the bath much above the knees: and he frequently contents himself with a mere foot-bath or common wash-hand basin alone. In both which cases, however, the attendants on the patient should sponge him at the same time with the diluted aqua regia over the limbs, and occasionally over the body.

The aqua regia should be compounded of three parts in measure of muriatic acid and two of nitric acid; and, in preparing them for use, a pint of the combined acid is to be mixed with the same measure of water. It should, however, be observed by those who are inclined to form this mixture extemporaneously at their own houses, that, if either of the acids be poured immediately on the other a large volume of very offensive gas will be disengaged; on which account it will be better to pour them separately and slowly on their proper measures of water.

If the acids be of adequate strength, the mixture, subdiluted for bathing, will, to the taste, have the sourness of weak vinegar, and perhaps prick the skin slightly, if very delicate, but not otherwise, after it has been applied to the surface for half an hour. But since these acids vary much in their degree of concentration, as distilled by different chemists, there will be some variation in their power. The strength of the bath, however, should not be much greater at any time than the proportion here laid down; for otherwise it may excite a troublesome rash, and give a yellow hue to the nails and skin of the feet, or whatever other part is exposed to its action. A narrow tub, for a knee-bath, just wide enough to hold the feet and reach the knees, should contain three gallons of the prepared bath liquor, and consequently about nine ounces in measure of the diluted aqua regia. For a foot bath half a gallon may be sufficient, and a common wash-hand basin may be employed as a vessel for the purpose. The feet should remain in the bath for twenty minutes or half an hour, and the legs, thighs, and abdomen, be in the mean time frequently sponged with the same. In the winter the water may be used warm; but this is not necessary in the summer. The baths may be employed first daily for a fortnight or three weeks, and afterwards every other day, or only twice a week.

Dr. Scott affirms that he has employed this process with decided advantage in almost all cases dependent upon a morbid secretion of bile, whether the secretion be superabundant, defective, or depraved. He finds it often, within a few hours of the first bathing, increase the flow of bile and ameliorate its character; and, in consequence hereof, excite an expulsion of dark-colored fæces, bright colored bile, or bile of a green brown or black color, like tar mixed with oil. He has told me, also, that when employed in the midst of a paroxysm of severe pain from spasm of the biliary ducts, or the passing of a gall-stone, he has often known it to operate like a charm, and produce almost immediate ease.

'This account,' continues Dr. Good, 'may be rather overcharged from the ardent mind of its intelligent inventor; but the process is worth following up, and varying in other proportions as well as employing in other families of cases. My own use of it is at present too limited to speak with decision; yet so far as I have tried it, it has certainly appeared to me to allay irritation, and produce a tonic effect. In two or three instances the advantage has been decisive; and patients who had hitherto been seldom two months without a severe return of the complaint, have entirely escaped, and apparently lost the morbid predisposition. In a few other cases it has completely failed.'

Under the head of specific, as opposed to common bathing, it may perhaps be right to mention the *sea water*, which is generally imagined to possess some superior, and even different, efficacy from fresh water of the same temperature. It is a vulgar notion that exposure to sea water, in the way of accident or otherwise, does not so readily engender catarrhal disorder as would the like exposure to ordinary water; and if this be a well-founded notion, there would seem to be some faculty possessed by the saline impregnation, capable of counteracting its otherwise injurious influence. How this operates, it does not seem very easy to understand, and we are disposed to suspect that there is some fallacy in the conclusion altogether; it may be that external circumstances, that habit, that the superior robustness of those individuals who are mainly exposed to sea water, may assist in its comparative negation of deleterious influence, and that the appendages to sea bathing may likewise act in aid of its superior salubrity, to a greater extent than is usually conceived. While we throw out these intimations, we would not, at the same time, wish to be thought unjustifiably sceptical with regard to the greater power of sea, than of common bathing; and it may be, that the recent project of causing 'the waters of the ocean to come galloping up to London,' is not mere quackery or chimera. . .

Dr. Parr observes that 'bathing in the sea is on the whole preferable to common bathing, as the heat is more uniform. It is, also, perhaps from the agitation of the water, more refreshing. Other causes of preference have been assigned; one is the greater pressure of the water impregnated with salt; the other the stimulus of that salt left on the skin. Each may have some effect, and the latter ground of preference is assuredly more certain than the former. We cannot easily conceive how the momentary increase of pressure can have any considerable effect, except by the increase of momentum; and the stay in the sea is too short to expect much advantage from this source.'

Vapor Baths can scarcely be considered as specifically different from those of water, heated to an extremely high temperature. This mode of bathing, though lately used in this country more than formerly, has been more freely and generally employed on the continent, and especially in Russia, where it constitutes one of the principal luxuries of the inhabitants of all ranks: and it is there employed for a multitude of diseases. It conveys heat more gradually than immersion in water; at the same time, more heat can be applied to the body, and its application may be continued for a longer time. The vapor bath was used by the ancient Romans, as it is by the modern Russians; but the former, as we have observed in a former part of the present article, did not practise the sudden transition which is common with the latter. See Vapor.

Air Bath. The celebrated Franklin, by his recommendation of reducing the temperature of the skin, in exposing the naked body to the air for some minutes, and thus causing a healthy excitation and pleasant feeling, in place of febrile irritation and morbid heat, has brought the practice of air bathing into pretty general employ. It merely consists in getting out of bed without any clothing, and walking for a time on the cold floor, and then either putting on the clothes, or what is better, returning to the warm bed, and lying for some time previously to dressing. This may, indeed, be practised at any time of the night with safety, when the individual is restless and uncomfortable from feverish heat; the effect of it, by the way, proves that the irritation connected with febrile heat has reference to something beyond the mere augmentation of temperature, since the re-action after returning to bed often brings with it as great, though not so uncomfortable, a measure of heat as that which prevailed previously to the exposure to cold; a mild and gentle perspiration sometimes also succeeds, which likewise shows that the capillary vessels of the surface are brought into a very different condition of being, from what was their state prior to the temporary reduction of temperature.

On Dry Baths, as they have been called, we have very little to offer. Some time since a good deal of attention was excited to a proposal, which indeed was put in practice, of burying the body in earth up to the chin, under the notion that its attractive or absorbing powers would draw morbid taints from the body, and thus restore health. In the commentaries of Van Swieten, on the aphorisms of Boerhaave, the following account is given of this practice:—'I have heard from a person most deserving of credit, that through the whole kingdom of Grenada, they have a method of curing phthisis by an earth bath; and I have since read the same account in the works of Francisco Solano de Lugue, who caused a pit to be dug in the earth, where no plants had been sown; and into this pit he put his patients up to the neck, and then covered them with the same earth which had been dug out, and there left them till they began to shiver, when he caused them to be taken out and wrapped in linen cloths, wetted with rose water.' A Dr. Graham, too, an empiric, who gained some celebrity, proposed and employed earth bathing; a practice (says a modern writer), which in the way he used it, consigned some of his patients to a perpetual mansion under the ground.

Sailors have been in the practice of employing warm sand baths for scurvy, and the ancients adopted many modes of exciting perspiration by dry heat; it is said moreover to be a practice at this day, in some parts, to cover the body with horse dung, for several chronic ailments; but these expedients are not in general thought available by individuals of the present period, who make physiology and pathology the ground-work of their remedial plans; and we are not, there fore, called upon to engage in any further disquisition respecting their alleged efficacy, or supposed modes of operation.

Bathing among the Turks.—In modern Turkey, as well as among the ancients, bathing makes a part of diet and luxury; so that in every town, and even village, there is a public bath. Indeed the necessity of cleanliness, in a climate where one perspires so copiously, has rendered bathing indispensable; the comfort it produces preserves the use of it; and Mahomet, who knew its utility, reduced it to a precept. Of these baths, and the manner of bathing, particularly at Cairo, the following account is given by Savary, in his Letters on Egypt: 'The first apartment one finds, in going to the bath, is a large hall, which rises in the form of a rotunda. It is open at the top, to give a free circulation to the air. A spacious estrade, or raised floor, covered with a carpet, and divided into compartments, goes around it, on which one lays one's clothes. In the middle of the building, a jet d'eau spouts up from a basin, and agreeably entertains the eye. When you are undressed, you tie a napkin round your loins, take a pair of sandals, and enter into a narrow passage, where you begin to be sensible of the heat. The door shuts to; and at twenty paces off, you open a second, and go along a passage, which forms a right angle with the former. Here the heat increases. They who are afraid of suddenly exposing themselves to a stronger degree of it, stop in a marble hall, in the way to the bath properly so called. The bath is a spacious and vaulted apartment, paved and lined with marble, around which there are four closets. The vapor, incessantly rising from a fountain and cistern of hot water, mixes itself with the burning perfumes. These, however, are never burnt except the persons who are in the bath desire it. They mix with the steam of the water, and produce a most agreeable effect. The bathers are not imprisoned here as in Europe, in a sort of tub, where one is never at one's ease. Extended on a cloth spread out, the head supported by a small cushion, they stretch themselves freely in every posture, whilst they are wrapped up in a cloud of odoriferous vapors, which penetrates into all their pores. After reposing there some time, until there is a gentle moisture over the whole body, a servant comes, presses you gently, turns you over, and when the limbs are become supple and flexible, he makes all the joints crack without any difficulty. He masses (i. e. touches delicately), and seems to knead the flesh without making you feel the smallest pain. This operation finished, he puts on a stuff glove, and rubs you a long time. During this operation, he detaches from the body of the patient, which is running with sweat, a sort of small scales, and removes even the imperceptible dirt that stops the pores. The skin becomes soft and smooth like satin. He then conducts you into a closet, pours the lather of perfumed soap upon your head, and withdraws. The ancients did more honor to their guests, and treated them in a more voluptuous manner. Whilst Telemachus was at the court of Nestor, 'the beautiful Polycasta, the handsomest of the daughters of the king of Pylos, led the son of Ulysses to the bath; washed him with her own hands; and, after anointing his body with precious oils, covered him with rich habits and a splendid cloak.' Pisistratus and Telemachus were not worse treated in the palace of Menelaus. 'When they had admired its beauties, they were conducted to basins of marble, where a bath was prepared; beautiful female slaves washed them; and, after anointing them with oil, covered them with rich tunics and superb pellices.' The closet to which one is conducted is furnished with a cistern and two cocks; one for cold, the other for hot water. There you wash yourself. Soon after the servant returns with a depilatory pomatum, which in an instant makes the hair fall off the places it is applied to. Both men and women make general use of it in Egypt. It is composed of a mineral called rusma, which is of a deep brown. The Egyptians burn it lightly, knead it with water, mixing it with half the quantity of slacked line. This grayish paste applied to the hair, makes it fall off in two or three minutes, without giving the slightest pain. After being well washed and purified, you are wrapped up in hot linen, and follow the guide through the windings that lead to the outer apartment. This insensible transition from heat to cold prevents one from suffering any inconvenience from it. On arriving at the estrade, you find a bed prepared for you; and scarcely are you laid down before a child comes to press every part of your body with his delicate fingers, in order to dry you thoroughly. You change linen a second time, and the child gently grates the callosity of your feet with pumice stone. He then brings you a pipe and Moka coffee. Coming out of a stove where one was surrounded by a hot and moist fog, where the sweat gushed from every limb, and transported into a spacious apartment, open to the external air, the breast dilates, and one breathes with voluptuousness. Perfectly massed, and, as it were regenerated, one experiences an universal comfort. The blood circulates with freedom; and one feels as if disengaged from an enormous weight, together with a supplenes and lightness to which one has been hitherto a stranger. A lively sentiment of existence diffuses itself to the very extremities of the body. Whilst it is lost in delicate sensations, the soul sympathising with the delight, enjoys the most agreeable ideas. The imagination, wandering over the universe, which it embellishes, sees on every side the most enchanting pictures, every where the image of happiness. If life be nothing but the succession of our ideas, the rapidity with which they then recur to the memory, the vigor with which the mind runs over the extended chain of them, would induce a belief that in the two hours of that delicious calm that succeeds the bath, one has lived a number of years.' Such are the baths, the use of which was so strongly recommended by the ancients, and which are still the delight of the Egyptians. It is by means of them that they cure rheumatisms, catarrhs, and such cutaneous disorders as are produced by want of perspiration. There are no people who make more frequent use of them than the Egyptians, and there is no country where there are fewer asthmatic people. The asthma is hardly known there. The women are passionately fond of these baths, frequ least once a week, and take with them roperly qualified to assist them. More is than the men, after undergoing the reparations, they wash their bodies, and ll, their heads, with-rose water. It is there ale head-dressers form their long black o tresses, which they mix with precious instead of powder and pomatum. There icken the edge of their eye-lids, and lengthen their eye-brows with cohel, a preparation of tin burnt with gall-nuts; and stain the finger and toe nails with the leaves of henne, a shrub common in Egypt, which gives them a golden color. The linen and clothing they make use of are passed through the sweet steam of the wood of aloes; and when the work of the toilet is at an end, they remain in the outer apartment, and pass the day in entertainments.

ING OF HAWKS, or FALCONS, is done ey have been thoroughly reclaimed; they offered water to bathe in where they may to the thighs, choosing a temperate clear that purpose. By the use of bathing, a ins strength, with a sharp appetite, and s bold.

-KOL, i. e. the daughter of a voice, an mong the Jews, frequently mentioned in nud. It was a fantastical way of divinaented by the Jews, though called by revelation from God's will, which he his chosen people, after all verbal prohad ceased in Israel. It was in fact a of divination similar to the sortes Virgilthe Heathens. For, as with them, the rds they happened to dip into, in the f that poet, were a kind of oracle whereby edicted future events; so, with the Jews, hey appealed to Bath-kol, the first hey heard from any man's mouth were upon as a voice from heaven, directing the matter they were anxious to enbout.

HMUS, Βαθμος, from βαινω, I move; tomy, an appellation given to such cavibones as receive the prominences of other nto them.

HRUM, a name given by ancient suro a kind of stool or bench proper for the on of dislocated bones. This is called 'Ιπποκρατειον, or the hyppocratic stool. ription and use are represented at large lterus. Arm. Chir. p. i.

HSHEBA, or BATSHUA, the daughter of or Ammiel, wife of Uriah the Hittite. s the mother of four sons by David, of Solomon and Nathan are reckoned in the gy of Jesus Christ.

HURST (Allan), earl of Bathurst, one of st celebrated statesmen of queen Anne's was born in 1684. His studies and his on were equally conducive to the brilliant e was destined to make in social life and enate, as a polite scholar, and a patriot. alents he had an opportunity of displaying as 1705; when, at the request of his far Benjamin, and of the constituents of Cier, he was returned to parliament for that h. He distinguished himself particularly truggles and debates relative to the union cotland, and firmly supported that mea- Though he consented to act a subordinate er in the opposition planned by Mr. Har- St. John, to the measures of the duke of Marlborough, he was of infinite service to his party, and the loss of the battle of Almanza seconded his efforts to dispel the intoxication of former successes. Amidst the storms of politics he steadily maintained a personal regard for Lord Somers, president of the council; and when that nobleman was divested of office, Mr. Bathurst preserved his esteem. In consideration of his zeal and services, the queen advanced him in 1711, to the dignity of a peer, by the title of baron Bathurst, of Battlesden, in Bedfordshire. He continued, however, to speak his sentiments with an undaunted freedom in the upper house; and was a formidable opponent to the court measures during the whole of Sir Robert Walpole's administration The acrimony of the prosecution carried on against the earl of Oxford, lord Bolingbroke, and the duke of Ormond, particularly stimulated his indignation and his eloquence; and on this occasion he observed, 'that the king of a faction was but the sovereign of half his subjects.' The South Sea scheme having infected the whole nation with a spirit of avaricious enterprise, an infinite number of families were involved in ruin. Lord Bathurst publicly impeached the directors, whose arts enabled them to amass surprising fortunes; and moved for having them punished by a forfeiture of their estates. When the bill of pains and penalties against Atterbury, bishop of Rochester, was brought into the house of lords, among the many friends the bishop's eloquence and ingenuity had procured him was Lord Bathurst. He spoke against the bill with vehemence, and declared, he 'could hardly account for the inveterate malice some persons bore to the ingenious bishop of Rochester, unless it was that they were infatuated, like the wild Americans, who believe they inherit not only the spoils, but the abilities of the man they destroy.' Sir Robert Walpole, having, after obstinate struggles, been forced to resign all his employments, Lord Bathurst was sworn of the privy council, and made captain of the gentlemen pensioners, which post he resigned in 1744. He was appointed treasurer to the Prince of Wales in 1757 and continued in the list of privy counsellors at the accession of George III. Lord Bathurst's integrity gained him the esteem even of his opponents; and his humanity and his benevolence, the affection of all that knew him more intimately. He added to his public virtues all the good breeding, politeness, and elegance, of social intercourse. Congreve, Vanburgh, Swift, Prior, Rowe, Addison, Pope, Arbuthnot, Gay, and most men of genius in his own time, cultivated his friendship, and were proud of his correspondence. Pope thus addresses him, in his Epistle on the Use of Riches:

> ' O teach us, Bathurst, yet unspoil'd by wealth !
> That secret rare, between th' extremes to move,
> Of mad good nature, and of mean self-love.'

And Sterne, in his letters to Eliza, thus speaks of him : 'This nobleman is an old friend of mine : he was always the protector of men of wit and genius ; and has had those of the last century always at his table. The manner in which his notice began of me, was as singular as it was polite. He came up to me one day as I was at the Princess of Wales's court ; 'I want to know you, Mr. Sterne ; but its fit you should know also who it is that wishes this pleasure : you have heard, continued he, of an old Lord Bathurst, of whom your Popes and Swifts have sung and spoken so much : I have lived my life with geniuses of that cast, but have survived them ; and despairing ever to find their equals, it is some years since I have closed my accounts, and shut up my books, with thoughts of never opening them again : but you have kindled a desire in me of opening them once more before I die, which I now do ; so go home, and dine with me.' 'At eighty-five,' he continues, 'he has all the wit and promptness of a man of thirty ; a disposition to be pleased, and a power to please others beyond whatever I knew !' In the latter part of his life, he preserved his cheerfulness, and was always accessible, hospitable, and beneficent. He delighted in rural amusements ; and enjoyed the shade of many a lofty tree which he had planted himself. Till within a month of his death, he constantly rode out on horseback two hours before dinner, and drank his bottle of claret or Madeira after it. He used to declare in a jocose manner, he never could think of adopting Dr. Cadogan's regimen, as Dr. Cheyne had assured him, fifty years ago, he would not live seven years longer, unless he abridged himself of his wine. Pursuant to this maxim, having invited several of his friends to spend a few cheerful days with him at his seat, and being one evening very loth to part with them ; on his son the late chancellor's objecting to their sitting up any longer, and adding that health and long life were best secured by regularity, he suffered him to retire : but as soon as he was gone, the cheerful father said, 'Come, my good friends, since the *old* gentleman is gone to bed, I think we may venture to crack another bottle.' He was advanced to the dignity of earl in 1772 ; living to see the above nobleman, his eldest son, several years lord high chancellor of Great Britain, and promoted to the peerage in 1771, by the title of Baron Apsley. Lord Bathurst married Catharine, daughter of Sir Peter Apsley, by whom he had two sons and five daughters. He died, after a few days illness, at his seat near Cirencester, in 1775, aged ninety-one.

Bathurst (Ralph), M. D. an eminent physician and divine, born in 1620. He studied divinity in Trinity College, Oxford ; but the times of confusion coming on, he applied himself to physic. He took the degree of M. D. and rose to such eminence, that he was, in the time of the usurpation, appointed physician to the state. Upon the Restoration he quitted physic ; was elected F. R. S. and president of his college ; and having entered into holy orders, was made chaplain to the king, and afterwards dean of Wells. Soon after, he served as vice-chancellor of Oxford, and was nominated by king William and queen Mary to the see of Bristol, but refused to accept it. He was an orator, a philosopher, and a poet : he possessed an inexhaustible fund of wit, and at eighty years of age, was a facetious companion. Ridicule was a weapon which he had always at hand. His poetical pieces in the Musæ Anglicanæ are excellent. He wrote several poems in English and Latin ; and died in 1704, aged eighty-four.

Bathurst, the chief town of a new settlement near the Great Fish River, on the eastward of the colony of the Cape of Good Hope. It is rapidly increasing. A large inn has been already built for the accommodation of visiters ; and as the site has been well chosen, Bathurst is expected very soon to become one of the first towns in the colony.

Bathurst, also a new British settlement on the island of St. Mary, at the mouth of the Gambia, on the western coast of Africa. Sir George Collier, in his second report, on the settlements of this coast, says, 'The island of St. Mary, upon which Bathurst, the capital, is rising with the same rapidity that the most healthful climate, and most fruitful and productive country could desire, is a barren, sandy spot, in many places scarcely above the level of the sea. Buildings, combining neatness and beauty, are appearing ; and St. Mary bids fair to rival every spot on the lengthened line of coast of western Africa, in commerce and industry.'

BATHUS, in entomology, a species of papilio (Pleb. Rur.), with entire black wings, glossed with blue ; beneath white, with numerous black dots, and a continued fulvous band. Fabricius. Inhabits Austria. It is the papilio battus of Schmetterl, and papilio telephii of Esper.

BATHYCHRUS Color, in painting, a term used by the Greeks to express what the Romans call austerus color.

BATHYERGUS, from βαθυεργειν, to work deeply in the earth ; in zoology, a genus of animals belonging to the order rodentia, class mammalia. Its generic character is, incisor teeth large, not covered by the lips, and wedge-shaped ; canine none ; grinders four on either side, above and below, the posterior sloping deeply outwards ; muzzle broad ; eyes small ; auricles none ; tail short and bristly ; toes five on each foot, short and armed with thin flat nails. The two species are, 1. B. maritimus, Illig. Cur. ; mus maritimus, Lin. ; la grande taup du cap, Buff. ; African rat, Pen ; sand mole of the Dutch ; about the size of a rabbit, and of a cinereous brown color ; having a large head without auricles, and the nose slightly flattened, wrinkled, and black ; the legs are short, with four toes, long claws, and a thumb, with a short claw on the anterior extremities. The hind legs are long, having five toes armed with short claws. It inhabits the Cape, where it is known by the name of zand mole. It burrows near the shore, and renders travelling horseback dangerous. Pennant says, they sometimes let a horse sink in them up to the shoulders! 2. B. capensis, Cur.; mus capensis, Lin. Pall.; taup du cap de Bonne Esperance, Buff, Cape rat; Pen. About seven inches long, of a dusky rufous ash brown color, with a white stripe round the eye and ear, and on the vertex; muzzle black. It is very common in the gardens at the Cape, and called, 'bless moll.'

BATHYLLUS and Pylades, inventors of pantomime entertainments on the stage. Bathyllus succeeded in representing comedy; Pylades in tragedy. The art consisted in expressing the passions by gestures, attitudes, and dumb show; not, as in modern times, in machinery, and the fooleries of harlequin. They flourished at Rome, under Augustus, about A. D. 10. Each of them kept scholars, who perpetuated their master's name: the followers of Bathyllus, who excelled in the comic calling themselves Bathylli; and those of Pylades, who excelled in the tragic, calling themselves Pyladæ.

BATILDA (St.), commonly called St. Badour, a Saxon princess, was carried away from England by pirates, and sold to Archambaud, mayor of the palace, where she was seen by Clovis II., who married her, and had by her Clotarius III., Childeric II., and Thierri III. She administered the government with great wisdom after his death, and after founding several abbeys, died about 680, in a monastery.

BATINDA, a small district in Hindostan, in the north-west quarter of the province of Delhi, comprehending the Lachy jungle, celebrated for its breed of excellent horses, said to be descended from some of the Persian horses stolen from the camp of Nadir Shah, in the year 1739.

BATIS, in botany, a genus of the tetrandria order, belonging to the diœcia class of plants, the characters of which are: of the male, the amentum is four ways imbricated, and both the calyx and corolla are wanting; of the female, the amentum is ovate, the involucrum dyphyllous; calyx and corolla wanting; the stigma is bilobate and sessile; the berries condumate and four-seeded. There is but one species; viz. B. maritima, a native of Jamaica.

Batis, in botany, the name by which Pliny and some authors call the sea-plant samphire.

Batis, in ichthyology. See Batos, and Raia.

BATISCAN, a river of Lower Canada, rising in the ridge of mountains that run westerly into the interior from Quebec. It falls into the St. Lawrence, about fifty-four miles above that city. At its mouth, it is 350 yards broad, but is so shallow as not to be accessible for boats higher than six or seven miles up the stream, which is also interrupted by many falls and rapids.

BATISTE, in commerce, a fine white kind of linen cloth manufactured in Flanders and Picardy. There are three kinds of batiste; the first very thin; the second less thin; and the third much thicker, called Holland batiste, as coming very near the goodness of Hollands. The chief use of batiste is for neck-cloths, head-cloths, surplices, &c.

BATMAN, in commerce, a kind of weight used at Smyrna, consisting of six okes. Forty batmans make a camel's load, and amount to about 720lb. in English weight.

Batman, Persian, or Battament, is of two kinds: one called the king's weight, batman de chahi, or cheray, used for weighing most of the necessaries of life, equivalent to about 12¼lb. Paris weight. the other called batman of Tauris, equal to 6lb. 4oz. Paris or Amsterdam weight. These are the proportions given by Tavernier. Chardin rates the Persian batmans somewhat lower, viz. the former at 12lb. 12oz. and the latter at 5lb. 14oz.

Batman, Turkish, is also of two kinds; the larger, containing six okes, ocques, at 3¾lb. Paris weight the ocque; so that the batman amounts to about 22½lb. the smaller, composed likewise of six ocques, at 15 oz. the ocque, amounting to 5lb. 10 oz.

BATMANSON (John), prior of the Carthusian monastery, in the suburbs of London. He was some time a student at Oxford, and intimately acquainted with Edward Lee, archbishop of York, at whose request he wrote against Erasmus and Luther. He died in 1531, and was buried in the chapel belonging to the monastery. Bale says he was a proud forward person; and that Erasmus, in a letter to the bishop of Winchester, calls him an ignorant fellow. But Pitts gives him the character of a man of genius, zeal, piety, and learning. He wrote, 1. Animadversiones in Annotationes Erasmi in Nov. Testamentum. 2. A Treatise against some of Luther's works. These two he afterwards retracted. 3. Commentaria in Proverbia Solomonis. 4. In cantica Canticorum. 5. De unica Magdalena. 6. Institutiones Noviciorum. 7. De Contemptu Mundi. 8. De Christo duodenni. 9. On the words Missus est, &c.

BATONI (Pompeo), a celebrated Italian painter, born at Lucca in 1708. He gained great fame by his productions, which were eagerly sought after by persons in the highest stations. So that honors and riches were heaped upon him; the emperor Joseph granted him a patent of nobility. He died in 1787. One of his most admired pieces, is a representation of Simon the magician contending with St. Peter, in the great church dedicated to the apostle at Rome.

BATNEER, a town of Battie, and province of Delhi, in Hindostan. It is situated on the borders of a sandy desert, and was formerly a place of great consequence. It was taken by the celebrated Timur, or Tamerlane, in the year 1398, who put all the inhabitants to death, and burned the city. Long. 74°. 45′. E., lat. 29°. 28′ N.

BATON, in botany, a name by which some authors call the true turpentine tree.

Baton, in military affairs, a staff.

Baton a deux bouts, a quarter-staff.

Baton de commandement, an instrument of particular distinction, which was formerly given to generals in the French army. Henry III. before his re-ascension to the throne, was made generalissimo of all the armies belonging to his brother Charles the IX., and publicly received the baton, as a mark of high command.

Baton rouge, a flourishing post town of Louisiana, on the east bank of the Mississippi, about 140 miles above New Orleans. The population is estimated at 5000 or 6000 persons.

BATOON, in military affairs, a truncheon, or marshal's staff

Batoons of St. Paul (Bastoncini di San Paolo), in natural history, a name given by some of the Italian writers, as Augustino Scilla, and others, to the lapides Judaici, or other spines of echini. These are found in vast abundance in the island of Malta; and, like almost every thing else there, are denominated from St. Paul.

BATORI (Stephen), king of Poland. He was born of a noble family in Transylvania, and elected prince of his native country in 1571; after which he gained such reputation, that upon the deposition of Henry, duke of Anjou, by the Poles, his party prevailed over that of Maximilian; and, having married the princess Anne, he was crowned in 1576. He proved an excellent prince, and successfully opposed both Russia and Sweden; while he gained great honor to himself by his merciful conduct in the midst of the most horrible cruelties on the part of his enemies. He died in 1586.

BATOS, in ichthyology, the name given by Aristotle, and all the old writers, to the skait. They have generally called the male batos, and the female batis. It is a species of the raia, and distinguished by Artedi by the name of the variegated ray, with the middle of the back smooth, and one row of spines on the tail. Albertus calls it the rayte, and rubus.

BATRACHIA, in zoology, one of the orders or great divisions of the class Reptiles.

BATRACHIAS Lapis, from *βατραχος*, a frog; the frog-stone, a name applied by different writers to two very different substances; some understanding by it lumps of common flint, accidentally formed into this figure; and others, those pieces of amber which contain either a whole frog, or any part of one.

BATRACHOMYOMACHIA, from *βατραχος*, a frog, *μυς*, a mouse, and *μαχια*, a battle; the battle of the frogs and the mice, the title of a fine burlesque poem generally ascribed to Homer.

BATRACHUS, from *βατραχος*, a frog; in zoology, the frog fish. A genus of animals belonging to the family perca, order acanthopterygii, class, pisces. The generic character is head flattened horizontally, larger than the body; ventral fins straight, attached under the throat; first dorsal fin short, supported by three spinous rays; second dorsal long and soft, opposite to which the anal fin also soft; mouth and gills very large; gill flap spined; lips sometimes bearded. This genus was established by Schneider in his Bloch's Icthyology, and named from the immense size of the head, resembling that of the frog. The species inhabit the southern hemisphere, and are separated into two divisions, those with and those without beards or cirrhi on the lip. The principal are, 1. With beards, B. didactylus; two fingered frog fish, inhabits Guinea; B. tau, toad fish; Garden states that this animal is called by the inhabitants of Carolina the 'toad fish;' by the French it has been called 'crapaud de mer.' Its habits are very little known, but it is considered predacious. It is found in hot climates, and is taken on the coasts of Carolina. B. grunniens, Schneid.; cottus grunniens, Lin. Bloch; grunting bull head, Shaw; grunting frog fish. This animal is about ten inches long; of a brown color marked with white on the sides; inhabits America and the Indian Seas. 2. Without beards. B. Surinamensis. B. Indicus, are founded by Bloch, the cottus insidiator, and B. guavina of the Havannah.

BATSCH (Augustus John George Charles), was born at Jena in 1761. He became professor of philosophy in the university of his native place, where he founded a society for the study of natural history, of which he was president. He died in 1802. His works are—1. Elenchus Fungorum, 8vo. 2. An Introduction to the Knowledge and History of Vegetables, 8vo. 3. Essays on Botany and Vegetable Physiology, 8vo. 4. Botany, for Ladies and Amateurs, 8vo. 5. Introductory Essay to the Knowledge of Animals and Minerals, 8vo.

BATSEN, or Bacs, a county and town of Hungary; the county is bounded on the north by that of of Scholt, on the south by Bodrog, on the east by little Camania and the Theyss, and on the west by the Danube, which separates it from Sclavonia. It is inhabited by Hungarians and Rascians, and a few Germans. After being united with that of Bodrog, it was separated from it for several years, but was re-united by Joseph II. Since the introduction of the Spanish breed of sheep the trade in wool has been very considerable. This county has been frequently the theatre of war between Austria and Turkey. The capital, which was formerly more considerable than at present, and was the see of a bishop, suffragan of Colocza, is situated four miles from the north side of the Danube, and twenty from the conflux of the Danube and Drave. Twenty miles north-east of Funfkirchen, and seventy-five south of Buda. Long. 19°. 10′. E., lat. 46°. 18′. N.

BATTA, a country of Sumatra, stretching along the south-western shore between the Sinkeli and Tabuyong, runs across the whole island. This is one of those districts that have become known to us principally by the modern missionary exertions. In the autumn of 1821 Mr. Burton visited the interior, opposite to the East India Company's settlement at Natal, and found it composed of rugged hills, covered with thick forests, and separated by ravines which often formed the beds of rapid rivers. His journey extended as far as Mora Summa, a station which has lately been chosen by the Company's resident at Natal, for the purpose of maintaining a freer communication with the Battas. This station is situated about the middle of the range of lofty mountains seen in a north-easterly direction from Natal hill, and within three days walk of the Mendeeling country, which is spoken of in the highest terms by the princes nearer the shore, who have visited it; and is supposed to contain a population of 100,000 individuals. Mr. Burton says, 'The country round here is the most beautiful I have seen on Sumatra. It is cultivated chiefly with labaugs, for several miles in every direction. There is no sawah ground. Th

Batta people of this place, unlike their neighbours, and unlike Batta people of other places, live on their respective farms, and not collected together in dusuns (villages). The houses scattered upon the surrounding hills, reminded me much of my favorite Gloucestershire, as I viewed them at a distance.'

The chief products of this country are pepper, plantains, Indian corn, camphor, cotton, indigo, cassia, and gum benzoin. Gold and sulphur are among its mineral treasures; the first of which Mr. B. had an opportnnity of seeing the Battas procure from the beds of the rivers, in the same way nearly as in South America. Among the animal tribes, monkeys, elephants, and tigers, are numerous; but there are very few birds.

The Battas Mr. Burton describes as fine, tall, stout, good-looking people, superior in appearance to the generality of the Malays. They have a peculiarly fierce and independent look, are well dressed in cotton cloths, manufactured by the women, and wear English beads as ornaments. 'These people,' he remarks, 'are perfectly independent; they have no idea of their own inferiority to any people on earth, and their carriage and behaviour tell you so. They are very polite in their own way, are good speakers, and know perfectly well how to manage every point of an argument, so as to turn it to their own advantage.'

The Battas have a settled language, which is extensively written and understood, and many neatly executed books. The whole population is estimated at a million, 2 or 300,000 of whom can read. 'I have begun to read their language,' says Mr. B., 'and find there is nothing to fear relative to its acquisition, the character is remarkably simple, and every sound having its representative mark, the language may be pronounced correctly by any person who has acquired the character, though he may not understand what he reads.' Mr. Prince, the Company's Natal resident, drew up a brief account of the religion of these people, at the request of Sir T. S. Raffles, from which it appears to be compounded of the most ridiculous and barbarous superstitions. They do not, however, worship images, but believe in the existence of certain deities, whose attributes indicate a much greater degree of knowledge and civilisation at some former period. Dee Battah Assee Assee is the Creator and Father of all things, and is supposed to have appointed three brothers as his agents to instruct mankind. Bataragourou, the god of justice; Seeree Padah, the god of mercy; but Mahalabhoolan, the third brother, soon disagreed with the other two, separated from them, and propagated tenets directly in opposition to theirs. He is therefore described as the source of 'discord and contention—the instigator of malice and revenge—the inciter of anger—the source of fraud, deceit, lying, hypocrisy, and murder.' He has the chief influence among the Battas, and they acknowledge that petitions are seldom offered to either of the others. The only semblance of a priest among them, is a person named Dattoo, who is skilled in all their superstitions; and there is generally one of these to every village; but the only religious ceremonies the existence of which Mr. Prince could ascertain, appeared to consist in an invocation of the manes of the dead. 'The influence of the Dattoos over the deluded Battas is such,' says Mr. P., 'that they will not engage in any undertaking, however trifling, without first consulting them. They expound all their religious books, and, according to their interpretation, a day is chosen as propitious to the accomplishment of the desired object, whether it be a suit, a journey, or war. The moral conduct of these people appears to be influenced by all the vile passions of an irregular and irritable constitution. Truth is seldom regarded when in the way of their interests or feelings; and honesty is never founded on principle, but on the fear of detection. The general tenor of their lives has obliterated the recollection and practice of the laws of Seeree Padah and Bataragourou, and they have no priesthood or rajah to recal them, or to reprove their obstinate adherenee to the principles of Mahalabhoolan, who is certainly no other than the devil.'

One of the amusements of this people is a peculiar and very cruel one, thus described by Mr. Burton. 'In one of the bazars,' he says, 'were about 100 persons amusing themselves with a most cruel game. They drive a small stake into the earth, and round it draw a circle, which they divide into four equal parts; in each of the partitions different individuals put equal sums of money; to the stake is tied a young fowl, whose throat being cut, it flutters about for a short time, and then expires. The person whose money happens to be in the partition where the fowl lies after death, sweeps the stakes. The circle may be divided into as many parts as there are persons who wish to follow the amusement. The man officiating as cut-throat was the imum, or priest, of the place.'

BATTÆ, a people of ancient Germany, formerly inhabitants of what is now called Hesse. Being dissatisfied with their situation there, they settled on the island formed by the Vahalis and the Rhine, which from them took the name of Batavia, or Batavorum Insula. Their government was a mixture of monarchy, aristocracy, and democracy. Their chief was, properly speaking, nothing more than a principal citizen, whose business was rather to advise than to command. The principal men who exercised jurisdiction, and commanded the troops, in their respective districts, were chosen, as well as the kings, in an assembly of the people. A hundred persons, selected from among the people, presided over every county, and acted as chiefs in the different hamlets. The whole nation was, in some measure, an army always in readiness. Each family composed a body of militia, which served under a captain of their own choosing. See BATAVI and BATAVORUM INSULA.

BATT'AIL, *v.* & *n.*
BATTAIL'ANT,
BATTAIL'OUS,
BATTA'LION,
BATTA'LIA.

Fr. *battaille*, Ital. *battaglia*, Span. *battala*. From the ancient Saxon beatan, to fight, or to strike. *Battailous* is having the appearance of a battle; *battalia* is the order of battle; and *battalion* signifies the division of an army, and formerly an army itself.

Sir Edward also sone þer gile gan he knowe,
Dight him to *bataile* bone, his trumpes did he blowe.
R. Brunne.

Lest any time it were assail'd,
Ful wel about it was *battailed,*
And round environ eke were set,
Ful many a rich and fair touret.
Chaucer. Romaunt of the Rose.

At many a noble armee hadde he be;
At mortal *battailes,* hadde he ben fiftene;
And foughten for our faith at Tramissene;
In listes thries—and aye slain his foe. *Id.*

Soon after this I saw an elephant,
Adorn'd with bells and bosses gorgeously,
That on his backe did beare (as *batteilant*)
A gilden towre which shone exceedingly.
Spenser. Vision of the World's Vanities.

But deeds of armes must I at last be faine,
And ladies love, to leave so dearely bought?
What need of armes where peace doth aye remaine,
Said he, and *battailes* none are to be fought?
As for loose loves they are vaine, and vanish into nought. *Id.*

He started up, and did himself prepayre,
In sun-bright armes, and *battailous* array;
For with that pagan proud he combatt will that day.
Id.

When sorrows come, they come not single spies,
But in *battalions.* *Shakspeare. Hamlet.*

A fiery region, stretch'd
In *battailous* aspect, and nearer view
Bristled with upright beams innumerable
Of rigid spears and helmets throng'd. *Milton.*

Next morning the king put his army into *battalia.*
Clarendon.

The pierc'd *battalions* disunited fall
In heaps on heaps; one fate o'erwhelms them all.
Pope.

BATTALIA, an army ranged in order of battle, or ready for engagement. The word seems formed from the Latin batualia, sometimes also written batalia, denoting a sort of military or gladiatorial exercise, as fighting with foils, or tilting at a post. In this sense, we meet with the depth of a battalia; to march in battalia, with the baggage in the middle; to break the battalia, &c. In the Roman battalia, the bastati made the front. It further implies an army or considerable detachment of troops drawn up in order of battle, or in any other proper form to attack the enemy. See BATTLE.

BATTALION, in the British army, is an undetermined body of infantry in regard to number, generally from 600 to 1000 men. The royal regiment of artillery has consisted of ten battalions, exclusive of the invalid or veteran battalion. Sometimes regiments consist each of one battalion only; but if more numerous are divided into several battalions, according to their strength; so that every one may come within the number mentioned. A battalion of one of our marching regiments consists of 1000 and sometimes of 1200 men, officers and non-commissioned included. When there are companies of several regiments in a garrison to form a battalion, those of the eldest regiment post themselves on the right, those of the second on the left, and so on till the youngest falls into the centre. The officers take their posts before their companies, from the right and left, according to seniority. Each battalion is divided into four divisions, and each division into two subdivisions, which are again divided into sections. The companies of grenadiers being unequal in all battalions, their post must be regulated by the commanding officer. See REGIMENT.

The *Triangular* BATTALION of ancient military history, was a body of troops ranged in the form of a triangle, in which the ranks exceeded each other by an equal number of men. If the first consisted of one man only, and the difference between the ranks was only one, then its form was that of an equilateral triangle: and when the difference between the ranks was more than one, its form was an isoscele, having two sides equal, or scalene triangle.

The *Round* BATTALION, is that in which the soldiers are ranged in concentric circles. This was much used by the Romans, and called in *orbem.* Cæsar, in his Commentaries, has given many instances.

The *Square* BATTALION. M. Folard shows at large, in his book de la Colonne, the weakness of the square battalion, and decries the modern method of ranging battalions so shallow as to render them weak, and unable to support each other: so that they are easily penetrated or broken; an essential fault in tactics. The real strength of a corps, according to this author, consists in its thickness, or the depth of its files, and their connexion and closeness. This depth renders the flanks almost as strong as the front. He adds, that it may be laid down as a maxim, that every battalion ranged deep, and with a small front, will beat another stronger than itself ranged according to the usual method. (Polyb. tom. i. p. 7.) But this opinion of Folard has not been adopted in modern practice; and his theory has been vigorously attacked by French tacticians. They admit the superior strength of his column to that of a modern battalion, if the action were to be decided with pikes and swords; but where fire arms must be used, M. Folard's column is so very ill disposed for this purpose, that it must infallibly be destroyed.

BATTECOLLAH, BATUCATA, a large open town on the sea coast of the British district of North Canara. The name signifies the round town. It stands in lat. 13° 56′ N., long. 74° 37′ E, on the north bank of a small river, which waters a very beautiful valley, surrounded on every side by hills, and in an excellent state of cultivation. Eight dams are yearly made, at the public expense, in order to water the rice grounds, which are constructed of earth, and only intended to collect the stream. Battecollah contains two mosques, one of which receives an allowance of 100 pagodas from the Company, and the other half as much. Many of the Mahommedans are wealthy, and their commercial speculations extend to different parts of the coast. Here are a great many guddies, or temples, belonging to the followers of Vyas; and two Jain temples, the only remains of sixty-eight that were formerly in the place.

BAT'TEL, *v., n. & adj.*
BAT'TLING,
BAT'TABLE,
BAT'TLER,
BAT'FUL.

It may be from the Sax. batan, to bat, says Mr. Todd. But Mr. Stevens thinks that *bat* is an ancient English word for increase. Perhaps it is from

h. *ga-batnan*, to advantage. *Batful* is a
ind of the two participles, *bat* and *full.*
b appears to be founded upon the noun,
signify to grow fat, to get flesh, to render
nd fruitful. *Battable*, is capable of cul-
. To *battel* (the verb neuter) is to stand
d in the college books at Oxford, for
expended at the buttery in the necessa-
eating and drinking. At Cambridge *size*
in a similar sense. Hence in the former
ity there is a student named a *batteler* or
in the latter a sizer. At Eton, *battel* is
describe the small portion of food, which,
tion to the college allowance, the pupils
from their dames. But in every appli-
he word has reference to increase.

s the grayne of mustard sede whiche when it
ine and so little that the unlearned sort of
mẽ could scarce possibly fele or see it, ye of
ceeding charitie and zele towards your country
id in such wise helpe to some in the field of
le, and did so cherishe with the sable *batleing*
f the paraphrase, that where before it was in
of the unlettered, the least of al sides, it is
t up, and growẽ much larger in bredth thẽ
r herbe of ye field. *Udall. Luke, Preface.*

est advizement was of bad, to let her
out her fill, without encumberment;
pe (they said) would make her *battel* better.
Spenser. Faerie Queene.

n the church of God sometimes it commeth to
in over *battle* grounds, the fertile disposition
is good; yet because it exceedeth due propor-
bringeth forth abundantly, through too much
se, things lesse profitable.
Hooker. Eccles. Pol.

inissa made many inward parts of Barbarie
umidia in Africk (before his time incult and
fruitful and *battable* by this means.
Burton's Anatomy of Melancholy.

as Sorrocold, or Sorocold, was born in Lan-
became a *battler* or student of Brazen-nose
in 1578, aged 17 years or thereabouts.
Wood. Athenæ, Oxon.

ny commons with a good stomach, and *battled*
scretion. *Puritan. Malone's Supplement.*

batful pasture fenc'd, and most with quickset
mound,
ndry sorts of soil, diversity of ground.
Drayton. Polybion.

TEL, in law, or TRIAL BY WAGER OF BAT-
ow disused. See APPEAL.

TEL ABBEY. See BATTEL.

TTELMA, a town of Syria, the ancient
e; the scene, according to classical writers,
transformation of the nymph of that
into a laurel. At a short distance these
re numerous. It is said that temples
ted to Daphne, Apollo, and Diana, stood
spot; and that Gallus built a church
ter period, which Dr. Pococke conjectures
ave been the remains of that of Apollo.
w the remains of a Christian church, with
inscriptions on the walls, and supposed
might have received the bones of Babylas,
of Antioch, and those of several other
s. There are fountains, and the remains
ndations, walls, and aqueducts, about Bat-
which is five miles south-west of Antioch.

TTELY (John), an English divine, born at
dmund's Bury, in Suffolk, in 1647, and educated at Trinity college, Cambridge. Archbishop Sancroft made him his chaplain, and gave him the rectory of Adisham in Kent, and the archdeaconry of Canterbury. He wrote Antiquitates Rutupinæ, and Antiquitates Edmundburgi. He died in 1708.

BATTEN, *v. a.* & *n.* A word, says Johnson, of doubtful etymology. Probably of the same derivation as battle, as it seems to have succeeded it, and to have the same meaning. It is, however, with its predecessor, growing fast into desuetude. It signifies to fatten, or make fat; to feed plenteously; to fertilise; and to live in indulgence.

CORIO. Follow your function, go and *batten* on cold bits. *Shakspeare.*

A man may *batten* there in a week only, with hot loaves and butter, and a lusty cup of muscadine and sugar at breakfast, though he make never a meal all the month after. *Ford. Perkin Warbeck.*

We drove afield,
Batt'ning our flocks with the fresh dews of night.
Milton.

Burnish'd and *batt'ning* on their food, to show
The diligence of careful herds below. *Dryden.*

Twa mice, full blythe and amicable,
Batten beside erle Robert's table. *Prior.*

The meadows here, with *batt'ning* ooze enrich'd,
Give spirit to the grass; three cubits high
The jointed herbage shoots. *Philips.*

While ardent Sirius shoots a thirsty ray,
And autumn yet withholds retreating day,
They range at large, and gambol through the stream,
Frisk on the beach, or *batten* in the beam. *Brooke.*

Go thou; the moan of woe demands thine aid;
Pride's licens'd oútrage claims thy slumbering ire;
Pale genius roams the bleak neglected shade,
And *battening* avarice mocks the tuneless lyre.
Beattie.

BATTEN is chiefly used by joiners, in speaking of doors and windows of shops, &c. which are not framed of whole deal, &c. with stiles, rails, and pannels like wainscoat; but are made to appear as if they were, by means of these battens, bradded on the plain board round the edges, and sometimes cross them and up and down.

BATTENS OF THE HATCHES, in sea language, are nailed along the tarpaulings, and serve to keep their edges close down to the hatches, in order to prevent the water which washes over the deck from penetrating into the lower apartments of the ship.

BATTENBERG, a small town of Germany, in the grand duchy of Hesse, on the Eder, with an old castle, a bailiwic, and 720 inhabitants. Twenty-five miles north of Giessen.

BATTENHAUSEN, an ancient town of Germany, in the territory of the Catti.

BATTENKIL, a small river of North America, in the state of Vermont, which rises in Bennington county, and running south-west, afterwards turns directly west into the state of New York, where it falls into the Hudson, nearly opposite to Saratoga.

BAT'TER, *v.* & *n.*
BAT'TERER,
BAT'TERING,
BAT'TERY.

Fr. *battre*; Ital. *battere*; Germ. *batten*; of the same etymology as *battail*, viz. ancient Saxon *beatan*: applied to things it signifies to beat down, to shatter. The substantive designates a mixture of several ingredients beaten together with some liquor; so called from its being so much beaten. Applied to persons, it describes thet urmoils and violence through which they have passed, and the worn-out condition in which they are left.

Man stondeth the sinne of contumelie or strif and cheste, and *battereth* and forgeth by vilians reprevinges.
Chaucer. The Persones Tale.

When Cupid scaled first the fort
Wherein my hart lay wounded sore,
The *battry* was of such a sort,
That I must yield or die therefore.
Horace. Uncertain Authors.

For now were the walls beaten with the rams, and many parts thereof shaken and *battered:* and at one place above the rest, by continual *batterie* there was such a breach, as the towne lay open and naked to the enemy. *Holland's Livius*, fol. 397.

Moreover take but three sextares or quarts of it being steeped, and it will yield a measure called modius, of thicke grewel or *batter*, called in Latin puls. *Id. Plinie*, vol. i. p. 558.

They all that charge did fervently apply,
With greedy malice and importune toyle,
And planted there their huge artillery,
With which they daily made most dreadful *battery*.
Spenser.

Sconce call you it? so you would leave *battering*. I had rather have it a head. *Shakspeare.*

Many men neglect the tumults of the world, and care not for glory, and yet they are afraid of infamy, repulse, disgrace, they can severely contemn pleasure, bear grief indifferently: but they are quite *battered* and broken with reproach and obloquy.
Burton, Anat. Mel.

Others to a city strong,
Lay siege encamp'd; by *battery*, scale, and mine,
Assaulting. *Milton.*

Crowds to the castle mounted up the street,
Batt'ring the pavement with their coursers' feet.
Dryden.

One would have all things little, hence has try'd
Turkey poults fresh from th' egg in *batter* fry'd.
King.

If you have a silver saucepan for the kitchen use, let me advise you to *batter* it well; this will shew constant good housekeeping.
Swift's Directions to the Cook.

As the same dame, experienc'd in her trade,
By names of toasts retails each *batter'd* jade. *Pope.*

The ordinary machines invented to *batter* or undermine the walls, were rendered ineffectual by the superior skill of the Romans. *Gibbon.*

BA'TTER, *v. n.* A word used only by workmen.

The side of a wall, or any timber, that bulges from its bottom or foundation, is said to *batter*. *Moxon.*

BAT'TER. In law, a violent striking of any man. In an action against a striker, one may be found guilty of the assault, yet acquitted of the *battery*. There may therefore be assault without *battery;* but *battery* always implies an assault.

Why does he suffer this rude knave now to knock him about the sconce with a dirty shovel, and will not tell him of his action of *battery?* *Shakspeare.*

Sir, quo' the lawyer, not to flatter ye,
You have as good and fair a *battery*
As heart can wish, and need not shame
The proudest man alive to claim. *Hudibras.*

BATTERING, in the military art, is the attacking a fortified place or work with heavy artillery. To batter in breach, is to play furiously on a work, as the angle of a half moon, to demolish and make a gap in it. In doing this, they never fire a piece at the top, but all at the bottom, from three to six feet from the ground. See BATTERY.

BATTERING RAM, in antiquity, a military engine used to batter and beat down the walls of places besieged. It is said to have been invented by Artemorus of Clazomene, a Greek architect, who flourished A. A. C. 441. It is thus described by Josephus: A vast beam, like the mast of a ship, strengthened at the one end with a head of iron, resembling that of a ram, whence it took its name, was hung by the middle with ropes to another beam, which lay across two posts; and hanging thus equally balanced, it was by a great number of men drawn backwards and pushed forwards, striking the wall with its iron head. But this engine did most execution when it was mounted on wheels, which is said to have been first done at the siege of Byzantium under Philip of Macedon.

BATTERING RAM, in military affairs. See ARIES.

BATTERING RAM, in heraldry, a bearing or coat of arms resembling the military engine above described.

BATTERSEA, a village in Surrey, which gives the title of baron to the St. John family. Population about 5000. In the church is a monument of Henry St. John, viscount Bolingbroke, who was born here, and his second wife, who was a niece of Madame de Maintenon. On another to the memory of Sir Edward Winter, who lived in the neighbourhood, it is related that being a captain in the East India company's service, in the reign of Charles II., he was attacked in the woods by a tiger, when, placing himself on the side of a pond, as the tiger flew at him, he caught him in his arms, and falling back with him into the water, got upon him and kept him down till he was drowned. On the site of Bolingbroke House, which was pulled down in 1775, has been erected a horizontal windmill of very large dimensions. The height of the main shaft is 120 feet, and the diameter at the bottom fifty-two. In 1771, a wooden bridge was built over the Thames at Battersea, under the direction of Mr. Holland, at an expense of £22,500.

BATTERY, in electricity, is a combination of coated surfaces of glass, commonly jars, so connected together, that they may be charged at once, and discharged by a common conductor. Mr. Gralath, a German electrician, was the first who contrived to increase the shock, by charging several phials at the same time. Dr. Franklin, after he had analysed the Leyden phial, and found that it lost at one surface the electric fire which it received at the other, constructed a battery of panes of large sash glass, coated on each side, and connected in such a manner that the whole might be charged together, and with the same labor as one single pane; and by bringing all the giving sides into contact with one wire, and all the receiving sides with another, he contrived to unite the force of all the plates, and to discharge them at once. Dr. Priestley describes a still more complete battery, of which he ap hat after long use he sees no reason for wishing he least alteration in any part of it. This batery consists of sixty-four jars, each ten inches ong, and two inches and a half in diameter, oated within an inch and a half of the top; orming in the whole thirty-two square feet of oated surface. The wire of each jar has a piece f very small wire twisted about the lower end of t, to touch the inside coating in several places; nd it is put through a pretty large piece of cork, vithin the jar, to prevent any part of it from ouching the side, which would tend to promote spontaneous discharge. Each wire is turned ound, so as to make a hole at the upper end; nd through these holes a pretty thick brass rod vith nobs passes, each rod serving for one row f the jars. The communication between these ods is made by laying a thick chain over them, r as many of them as may be wanted. The botom of the box, in which the jars stand, is covered vith a plate of tin, and a bent wire touching the late passes through the box, and appears on the utside. To this wire any conductor designed o communicate with the outside of the battery is stened, and the discharge is made by bringing he brass knob to any of the knobs of the battery. Vhen a very great force is required, the quantity f coated surface may be increased, or two or nore batteries may be used. But the largest and nost powerful battery, is that which was employed y Dr. Van Marum, to the amazing large electrial machine constructed for Teyler's Museum at Iaarlem. This grand battery consists of a great umber of jars, coated as above, to the extent of bout 130 square feet; and the effects of it, vhich are truly astonishing, are related by Dr. Van Marum, in his description of this machine, and of he experiments made with it, at Haarlem, in 1785.

Battery Galvanic. See Galvanism.

Battery, in law, is the unlawful beating of nother in breach of the peace. The least touchng of another's person wilfully, or in anger, is a attery; for the law cannot draw the line between ifferent degrees of violence, and therefore totally rohibits the first and lowest stage of it; every an's person being sacred, and no other having right to meddle with it, in the slightest maner. Upon a similar principle, the Cornelian w, de injuriis, prohibited pulsation as well as erberation; distinguishing verberation, which as accompanied with pain, from pulsation, hich was attended with none. But battery is in me cases justifiable or lawful; as, first, where ne who hath authority, a parent or master, gives oderate correction to his child, his scholar, or is apprentice: second, in self-defence; if one rike another, or only assault him, he may strike his own defence; and, if sued for it, may plead, on assault demesne, that it was the plaintiff's oriinal assault that occasioned it: third, in defence f goods or possessions, if one endeavour to eprive another of them, he may lay hands upon im to prevent him; and in case he persist with iolence, may beat him away: fourth, in the exerise of an office, as that of church-warden or eadle, a man may lay hands upon another to turn im out of church, and prevent his disturbing the ongregation: and if sued for this or the like battery, he may set forth the whole case, and plead that he laid hands upon him gently, molliter manus imposuit, for this purpose. On account of these causes of justification, battery is defined to be the unlawful beating of another: for which the remedy is, as for assault, by action of trespass vi et armis; wherein the jury will give adequate satisfaction in damages.

Battery, in metalline manufactures, or battery works, includes pots, sauce-pans, kettles, and the like vessels, which, though cast at first, are to be afterwards hammered or beaten into form. Some make battery for the kitchen, batterie de cuisine, comprehend all utensils for the service of the kitchen, whether of iron, brass, copper, or other matters. Others take the term in a narrower sense, and restrain it to utensils of brass or copper. A society for the mineral and battery work of England, was incorporated by queen Elizabeth.

Battery, in the military art, is a parapet thrown up to cover the gunners, and men employed about the guns, from the enemy's shot. This parapet is cut into embrasures, for the guns to be fired through. The height of the embrasures on the inside is about three feet; but they slope lower to the outside. Their width is two or three feet; but they open to six or seven on the outside. The mass of earth betwixt two embrasures, is called the merlon. The platform of a battery is a floor of planks and sleepers, to keep the wheels of the guns from sinking into the earth; and is always made sloping towards the embrasures, both to hinder the recoil, and to facilitate the bringing back of the gun. The powder magazines, from which the batteries are to be served, ought not to be far distant from them, nor from each other. The general one about sixty feet in the rear of the battery, and the small ones about half that distance. The magazines are made either to the right or left of the battery, as the officer may think fit for deceiving the enemy: they are commonly built five feet under ground; taking care to secure the sides and roof with boards, and cover them with earth, clay, or some such substance, lest fire should get in to the powder. The balls are generally piled up beside the merlons, between the embrasures, to be in readiness. Though in England engineers are employed to construct batteries, the officers of artillery, who are daily practising the different branches of their profession, would seem to be the fittest persons to direct the situation and to superintend the construction of their own batteries. Batteries are of various kinds, viz.

Batteries Cross, are batteries which play athwart one another upon the same object, forming there an angle, and causing more destruction; because what one bullet shakes the other beats down.

Battery a Ricochet is adapted to the method of ricochet, or duck and drake firing, first invented by Vauban, at the siege of Aeth, in 1692: the guns are loaded with small charges, and elevated so as to fire over the parapet; and the shot is thus made to bound along the opposite rampart, like a stone skimmed along the water. In a siege they are generally placed at about 300 feet before the first parallel, perpendicular to the faces produced, which they are to enfilade. This method has since been applied to mortars and howitzers with great success, which are of singular use in action to enfilade the enemy's ranks; for when the men perceive the shells bounding about with their fuzes burning, expecting them to burst every moment, the bravest among them will hardly have courage to wait their approach.

Battery Boxes, square boxes to be filled with earth or dung, for the purpose of making batteries, where gabions and earth cannot be had.

Battery, Comrade, or Joint Battery, is when several guns play at the same time upon one place.

Battery, Coffer, is that where the sides of the wall and merlons only are formed of fascines, and all the cavities or included spaces filled with earth.

Battery, Covered, or Masked, is when the guns and men are covered by a bank made of fascines and earth, of about eighteen or twenty feet thick, and seven or eight feet high. The guns are generally from nine to eighteen pounders; sometimes twenty-four pounders are used.

Battery D'Enfilade, is one that scours or sweeps the whole length of a straight line.

Battery de Revers, that which plays upon the rear of the troops.

Battery en Echarpe, is that which plays obliquely.

Battery en Rouage, is that used to dismount the enemy's cannon.

Battery Nails, pins used for fastening the planks that cover the platforms, and not made of iron but of the toughest wood, because iron might be dangerous, by the iron-work of the wheels striking against them in recoiling, &c.

Battery of a Camp is usually surrounded with a trench and pallisades, at the bottom, and with a parapet on the top, having as many holes as there are pieces of artillery, and two redoubts on the wings, or places of arms, capable of covering the troops, which are appointed for their defence.

Battery of Mortars differs from a battery of guns; for it is sunk into the ground, and has no embrasures, it being designed to throw its charge up into the air. It consists in a parapet of about twenty feet thick, seven and a half in front, and six in the rear; of a berme about three feet broad, according to the quality of the earth; of a ditch twenty-four feet broad at top, and twenty at the bottom. The beds are not made sloping like the platforms for guns, but exactly horizontal: they should be nine feet long, and six broad, with eight feet betwixt them, and nine from the part.

Battery, Open, is a number of cannon, generally field-pieces, ranged a-breast of one another, on a small natural elevation of the ground, or an artificial bank of about a yard or two high.

Battery, Sunk or Buried, batterie en terre, is that whose platform is sunk into the ground, so that there must be trenches cut in the earth, before the muzzles of the guns, for them to fire out at.

Battery, Floating, a sea battery of mortars, generally composed of old ships considered unfit for active service, properly strengthened by balks and other timbers. Several improvements have been attempted on floating batteries in this country. Among others, a mortar battery, for the bombardment of the enemy's ports, has been invented by Sir W. Congreve, which is proof both against shells and red-hot balls. It is so contrived that the masts and sails can be securely disposed of in less than a quarter of an hour; so that it then presents upon the water nothing but a mere hull, with sloping sides, which is rowed by forty men, under cover of the bomb-proof, and may, by the peculiar construction of the masts and rigging, be brought under sail again as expeditiously as dismantled. The rudder and moorings are wholly under water, and protected by the bomb-proof. The battery is armed with four large mortars, for bombardment, and four forty-two-pounder carronades, for self-defence; though, from being covered with plates and bars of iron, she can neither be set fire to nor be carried by boarding. Four such vessels, though not more than 250 tons burden each, and drawing less than twelve feet water, would throw upwards of 500 shells into any place in one tide, and with the greatest precision; both because from their construction they have nothing to apprehend from approaching the enemy's batteries, and because from the peculiar contrivance of the mortar-beds, the elevation of the mortars is not affected by the rolling or pitching of the vessel.

BATTEURS D'Estrade, scouts, or horsemen, sent out before, and on the wings of an army, two or three miles, to make discoveries; of which they are to give an account to the general.

BATTIE (William), M. D., was born in Devonshire, in 1704. He received his education at Eton; and in 1722 was sent to King's College, Cambridge. His own inclination prompted him to the law; but his finances could not support him at one of the inns of court. He therefore turned his attention to physic, and first entered upon the practice of it at Cambridge; where in 1729 he gave a specimen of an edition of Isocrates, which in 1749 he completed in 2 vols. 8vo. He afterwards removed to London; and in 1738 or 1739 fulfilled by marriage a long engagement to a daughter of Barnham Goode, the under master of Eton, who is honored with a place in the Dunciad, for having abused Pope, in The Mock Æsop. A cousin now left the doctor £30,000. In the dispute which the college of physicians had with Dr. Schomberg, about 1750, Battie took a very active part. In 1751 he published De Principiis Animalibus Exercitationes, in Coll. Reg. Medicorum, in three parts; which were followed in 1752 by a fourth. In 1758 being physician to St. Luke's, he published A Treatise on Madness, in quarto; and in 1762 Aphorismi de cognoscendis et curandis Morbis nonnullis, ad principia accommodati. In Feb. 1762 he was examined before a committee of the House of Commons, on the state of the private mad-houses in this kingdom, and received in their printed report a testimony honorable to

ilities. In 1776 he was seized with a pa-
stroke, of which he died June 13, aged
y-five.

TTIFOLIUM, or Battifollum, a kind
ver or defence, frequently mentioned by
historians of the middle age. It seems to
een made of wood, and erected on sudden
ons.

TTING Staff, the same with Batlet.

TTISTA (Franco), a celebrated painter,
at Venice, was one of the disciples of
el Angelo, whose manner he followed so
, that, in the correctness of his outlines,
rpassed most of the masters of his time.
intings are pretty numerous, and widely
sed; but his coloring being very dry, they
t much more esteemed than the prints he
. He died in 1561.

TTITURA, the scales that fly off from hot
when newly taken out of the fire and beaten
anvil.

TTLE, *v.* & *n.* } Derivation, Old Saxon,
TLEMENT, } beatan. See Battail,
TLEMENTED, } to fight; also to prepare
TLING. } for fight. The substan-
used in various senses; it sometimes is
d to an encounter between opposite armies;
a body of forces, or division of an army;
main or middle body of an army, says
between the van and rear. Crabbe traces
rb to the Latin *batuo,* and to the Hebrew
o beat, signifying a beating. The words
combat, and *engagement*, are frequently,
correctly, used as synonymes. *Battles*
ught between armies only. *Combats* are
into between individuals, whether of
te or human species. *Engagements* are
d to no particular membe only to such
engaged.

If houses strongly built,
And towers *battled* hie,
By force of blast be overthrown,
When Eol's impes doe flie.
Turberville.

he is bred out of that bloody strain
unted us in our familiar paths:
our too much memorable shame,
Cressy *battell* fatally was struck,
our princes captiv'd by the hand
black name; Edward, black prince of Wales.
Shakspeare.

The English army, that divided was
to two parts, is now conjoined in one;
d means to give you *battle* presently. *Id.*

e vaward, Zerbin hath in government,
duke of Lancaster the *battell* guides,
duke of Clarence with the rereward went.
Harrington's Ariosto.

king divided his army into three *battles*; where-
anguard only, with wings, came to fight.
Bacon.

ius Dentatus fought in an hundred *battles*;
mes in single combat he overcame, had forty
before, was rewarded with 140 crowns.
Anat. Mel.

ended frowning, and his look denounc'd
rate revenge, and *battel* dangerous
s than gods. *Milton.*

Michael, of celestial armies prince,
thou in military prowess next,
Gabriel, lead forth to *battle* these my sons
Invincible; lead forth my armed saints;
By thousands, and by millions. *Id*

Just so, by our example, cattle
Learn to give one another *battle.* *Hudibras.*

Through this we pass
Up to the highest *battlement*, from whence
The Trojans threw their darts. *Denham.*

'Tis ours by craft and by surprise to gain:
'Tis yours to meet in arms, and *battle* in the plain.
Prior.

We receive accounts of ladies *battling* it on both sides. *Addison.*

Should he go farther, numbers would be wanting
To form new *battles* and support his crimes. *Id.*

I cannot find my hero; he is mixed
With the heroic crowd that now pursue
The fugitives, or *battle* with the desperate.
Byron

There is given
Unto the things of earth, which time hath bent,
A spirit's feeling, and where he hath lent
His hand, but broke his scythe, there is a power
And magic in the ruined *battlement*;
For which the palace of the present hour
Must yield its pomp, and wait till ages are its doom
Id

Wave high your torches on each crag and cliff—
Let many lights blaze on your *battlements*—
Shout to them in the pauses of the storm,
And tell them there is hope——
And let our deep-toned bell its loudest peals
Send cheerly o'er the deep——
'Twill be a comfort to the wretched souls
In their extremity. All things are possible;
Fresh hope may give them strength, and strength
deliverance. *Maturin*

Battles, Ancient. The ancients never joined battle without much ceremony and preparation; as taking auguries, offering sacrifices, haranguing the soldiers, giving the word, or a tessera, &c. The signals were, sounding the classicum or general charge, and displaying a peculiar flag, called by Plutarch a purple robe. To which may be added, singing pæans, raising military shouts, and the like. A Roman legion, ranged in order of battle, consisted of hastati, placed in the front; of principes, who were all old experienced soldiers, placed behind the former; and of triarii, heavy armed with large bucklers, behind the principes. The hastati were ranked close: the ranks of the principes were much opener, so that they could receive the hastati; and those of the triarii opener still, insomuch that they could receive both the principes and the hastati within them, without any disorder, and still facing the enemy. When therefore the hastati found themselves unable to stand the enemy's charge, they retired gently within the principes, where joining with them, they renewed the combat. If these found themselves too weak to sustain the enemy, both retired among the triarii, where rallying, they formed a new corps, and charged with more vigor than ever. If these failed, the battle was lost; the Romans had no farther resource. The moderns are unacquainted with this method of inserting or embattling one company into another; without which the former cannot be well succoured or defended, and their places taken by others; which was a thing the

Romans practised with great exactness. For the velites, and in later times the archers and slingers, were not drawn up in this regular manner, but either disposed of before the front of the hastati or scattered up and down upon the void spaces of the hastati, or sometimes placed in two bodies in the wings. These always began the combat, skirmishing in flying parties with the foremost troops of the enemy. If they were repulsed, which was usually the case, they fell back to the flanks of the army, or retired again in the rear. When they retired, the hastati advanced to the charge. As to the cavalry, it was posted at the two corners of the army, like the wings on a body; and fought sometimes on foot, sometimes on horseback. The auxiliary forces composed the two points of the battle, and covered the whole body of the Romans. Other less usual forms of battle among the Romans were the cuneus, or wedge; globus, or round form; forfex, or pair of sheers; turris, or an oblong square figure; serra, or saw. The Greeks were inferior to the Romans in marshalling their armies for the battle, as they drew up their whole army in a front, and trusted the success of the day to a single force. They had three forms of battle for the horse, viz. the square, the wedge, and the rhombus or diamond form. The first held best for the defensive; the latter for the offensive; the wedge being preferred as bringing most hands to fight.

The Romans had their particular days, called præclares dies, wherein alone it was lawful to join battle; and others wherein it was unlawful, called dies atri. The Athenians, by the ancient laws of their country, were not to draw out their forces for battle till after the seventh day of the month. Lucian relates of the Lacedemonians, that, by the laws of Lycurgus, they were not to fight before full moon. Among the Germans it was reputed an impiety to fight in the wane of the moon; and Cæsar tells us that Ariovistus was beaten by him, because, contrary to the laws of his country, he had fought when the moon was in her wane. The German soldiers were intimidated with the apprehension, and afforded Cæsar an easy victory; acie commissa, impeditos religione hostes vicit. Jerusalem was taken by Pompey in an attack on the sabbath day, when, by the superstitious notions of the Jews, they were not allowed even to defend themselves. The Romans did not carry their superstition so far; their atri dies were only observed in respect of attacking; no day was too holy for them to defend themselves in. Among the ancients, we find frequent instances of battles in the night; it was by moon-light that Pompey beat Mithridates, and Scipio, Asdrubal and Syphax.

The Greeks notified the places of their battles and victories by adding the word Νικη; whence Nicomedia, Nicopolis, Thessalonica, &c. The ancient Britons did the like, by adding the word Mais; whence Maisseveth, Malmaisbury, &c. The English by the word field.

Battle, or Battel, a market town in the hundred of Battle, Hastings rape, Sussex, twenty-six miles south-east from Tunbridge, and fifty-six south from London; containing 2852 inhabitants. The ancient name was Epiton, but the famous battle of Hastings gave it its present name, in 1066; the conqueror first landed near Pevensey, a few miles distant. In memory of this important day, William founded a celebrated abbey, at Heathfield, or Headfield plain, called Battle-Abbey; one of those religious houses which had, formerly, the privilege of sanctuary. From its remains it appears to have been very magnificent, they being nearly a mile in circumference: its abbot was mitred. The gate-house is entire, and is converted into a sessions' house. On one part of the site of the abbey stands the family mansion of the Websters. The incumbent of the church is called the dean of Battle. Here is a charity school for forty boys. At no great distance is Beacon-hill, formerly called Standard-hill; where the standard of the conqueror was first planted. The town has long been famous for making the best gunpowder in Europe. The market is on Thursday, till 1600 it was held on Sunday: it has also a very large market on the second Tuesday in every month.

Battle-Axes were a principal part of the offensive armour of the Celtæ. At the siege of the Roman Capitol by the Gauls, under Brennus, we find one of the most distinguished of their warriors armed with a battle-axe. And Ammianus Marcellinus, many centuries afterwards, describing a body of Gauls, furnishes them all with battle-axes and swords. Some of the weapons have been found in the sepulchres of the Britons, on the downs of Wiltshire, and in the north of Scotland. Within these four or five centuries the Irish went constantly armed with an axe. At the battle of Bannockburn, king Robert Bruce clave an English champion down to the chine at one blow with a battle-axe. The axe of Lochaber remained a formidable implement of destruction in the hands of the Highlanders, nearly to the present period; and it is still used by the city-guard of Edinburgh, in quelling mobs, &c.

Battle Dykes, a place in the parish of Oathlaw, in Angusshire, where there are the remains of a Roman camp, and a via militaris connecting it with another in the parish of Inverarity. They are supposed to have been erected by Agricola.

Battle-Fauld, a place in Aberdeenshire, in the parish of Longside, where there are a great number of tumuli and other evidences, as well as the name, confirming the tradition of its having been the scene of a foreign invasion.

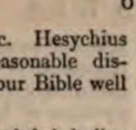
BATTLEFIELD, a small place in Shropshire, about five miles east of Shrewsbury, distinguished as the scene of the memorable battle in which Henry IV. overthrew Hotspur's rebellion, in 1402, in memory whereof he founded a collegiate church, part of which is still used. A mound adjoining the church-yard, marks the burial place of the slain; and a plot of ground called King's Croft distinguishes the place in which the royal tent was pitched.

BATTOL'OGIZE, } Fr. *battologie*; fr
Battol'ogist, } the Greek βαττολογ
Battol'ogy. } which means to d
Battus did, and which is described by S
in these words βαττολογια η Πολυλογια,

nultiplying of words, &c. Hesychius
it 'empty, idle, unseasonable dis-
ind the translation of our Bible well
it by 'vain repetitions.'

> eastern mode, they wagged their bodies,
> ir heads, and *battologizing* the name Al-
> ddaw and Mahumet very often.
>
> *Sir T. Herbert's Travels*, p. 191.

)N, in merchandise, a name given to
ieces of wood or deal for flooring or
poses.



, Battune, or Bas-
bâton, in heraldry, a
heon, used as an abate-
oats of arms to denote
y, thus:

)RY, a name given by the Hans Towns
magazines or factories abroad. The
hese battories are those of Archangel,
d, Bermen, Lisbon, Venice, and Ant-

ACHUS, in ichthyology, a species of
und in Asia and Africa. The dorsal
gle, and contains sixty rays; beards of
h eight. Lin. Mus. Fr.—The tail is

US, a general of the Celti, who, ac-
o Camden and Boetius, gave the first
the Roman conquests, under Augustus;
routed in the reign of Tiberius, part
ttled at the mouth of the Rhine, where
the country was named Batavia.

s, an order of ci-devant penitents at
and in Provence, whose piety carried
exercise severe discipline upon them-
h in public and private.

s, in the heathen mythology, a herds-
m Mercury turned into a touch-stone,
ering, for a bribe, what he had pro-
conceal.

UTA, in the Italian music, the motion
nd or foot in keeping or beating time.
talian musicians, a battuta imports, in
or beating each time equally. This
occurs after what they call recitativo,
rather declaiming than singing, and
little or no measure is observed.

A, Butua, Buthoe, or Buthoece, in
eography, a town of Dalmatia situated
driatic; now called Budoa; which see.

ALIA, from batuere, Lat. to fence, the
of those who learned to fence.

ATORES, in antiquity, fencers.

DA, a method of fishing mentioned in
ddle age writers, wherein the fish are
y beating the water with poles, till
into one place, they are the sooner

UECAS, Las, a territory of Spain, in
nce of Leon, almost insulated amid the
untains of the bishopric of Coria, fifty
tant from Salamanca. It forms a sort
, a league in length, the inhabitants of
supposed by some writers to have re-
r ages unknown to the rest of Spain.

RIN, a town of European Russia, in the Ukraine, on the river Sem, now in the government of Czernigov. The castle was formerly the residence of the hetman, or commander-in-chief of the Cossacks. On the desertion of the hetman Mazeppa to Charles XII. of Sweden, in 1708, the town was taken by the Russians, sacked and burned, and all its inhabitants put to the sword. The empress Elizabeth made a perpetual grant of it, with part of the surrounding country, to the hetman Rasumoski, under whom the houses were rebuilt. It is eighty miles E. S. E. of Czernigov, the capital of the province.

BATURIUS. See Bacurius.

BATUS, בת, Heb. an Hebrew liquid measure, containing seventy-three sextaries.

BATTU (Pulo Batu).—An island off the western coast of Sumatra, situated immediately to the southward of the equinoctial line. In length forty miles, by ten the average width. Their exports are cocoa-nuts, oil, and sivallo or sea slug. It is largely wooded, and the inhabitants are subject to the Rajah of Buluam.

BATTY or Bhatti, the country of the Batties, or Bhatties, bounded on the north by the Punjab and the river Sutuleje, east by the district of Hurrianah, west by the desert, and south by Bicanere. From north to south it extends about 150 miles, and from east to west about 100, comprehending part of the provinces of Lahore, Delhi, and Ajmeer.

The productive part of the country is along the banks of the river Cuggur, from the town of Futtehabad to Batneer. The land within the influence of the inundations of this river produces wheat, rice, and barley, but the remainder of the Bhatty country, owing to a scarcity of moisture, is sterile and unproductive. The Cuggur is afterwards lost in the sands to the west of Batneer, though it is said formerly to have joined the Sutuleje in the vicinity of Ferozepoor.

The capital is Batneer; the other towns of note are Arroah, Futtehabad, Sirsah, and Ranyah. There is but little commerce carried on in this country, the inhabitants being more addicted to thieving than industrious pursuits. With the exception of the sale of their surplus grain, ghee, and cattle, the Batties have little intercourse with the neighbouring states. Their imports are coarse white cloth, sugar, and salt, but the trade is inconsiderable. The Bhatties are properly shepherds. Their morals are very indifferent, their neighbours describing them as cruel, savage, and ferocious thieves from their birth. The females are allowed to appear in public unveiled, and without any of that concealment so common over Hindostan.

BATZ, Batzen, Bat, or Bate, in commerce, a small copper coin, mixed with a slight portion of silver, current in parts of Germany, and in Switzerland, and varying in value according to its alloy.

BAVAR, or Bauer, or Bouwer (John William), was born at Strasburgh in 1610, and became a disciple of Frederick Brentel. He had great genius, but the liveliness of his imagination hindered him from studying nature, or the antique, in such a manner as to dives- himself of his German taste, though he went to

Rome to improve himself. In Italy he applied himself entirely to architecture, as far as it might contribute to the enrichment of his landscapes, which were his favorite subjects; and for his scenes and situations, he studied the rich prospects about Frescati and Tivoli. He was fond of introducing battles, marchings of armies, skirmishes, and processions; but never arrived at a grandeur of design; nor could he ever express the naked figure. His pencil however was light, his composition good, and his general expression beautiful. He painted in water-colors on vellum; his coloring is glowing, but his drawing is incorrect. He etched from his own ideas numerous designs from Ovid's Metamorphoses, very much in the style and spirit of Callot, and died at Vienna in 1640.

BAVARIA, now one of the principal secondary states of Germany, was derived from a circle of the same name, bounded by Franconia and Bohemia on the north, Austria on the east, Tyrol on the south, and Suabia on the west. The original circle included a territory of 16,500 square miles, covered with a population of 1,300,000 inhabitants, and before the dismemberment of the German empire, in 1806, formed one of its great divisions. The numerous states which comprised it were formed into two divisions, governed by the ecclesiastical and secular benches, the former including the archbishop of Saltzburg, the bishops of Ratisbon, Passau, and Freysingen, the princely provostship of Berchtolsgaden, with the abbeys of St. Emerau, Nieder and Ober Munster, in the city of Ratisbon. The latter consisted of the elector of Bavaria, the dukes of Neuburg and Saltzburg, the Landgrave of Leuchtenberg, the prince of Steinstein, the counts of Haag and Ortenburgh, with the lords of Ehrenfels, Saltzburg, Pyrbaum, Hohen-Waldeck and Breiteneck, together with a representative from the imperial town of Ratisbon.

The greater part of this circle belonged to the elector, who was at that time one of the most powerful princes of Germany; and before the French revolution wielded the imperial authority, not only over the countries of the secular bench, already mentioned, but over the lordships of Wiesenstein, Meindilheim, and Schwabach, in Suabia; most of the country of Erbach, in Franconia; the palatinate of the Lower Rhine, in the circle of that name; the principalities of Simmern, Lautern and Veldenz; two-thirds of the country of Spanheim; half the bailliage of Homburg in the circle of the Upper Rhine, together with the duchies of Juliers and Berg, in the circle of Westphalia.

The ancient duchy of Bavaria formed a great part of the circle, bordering on Austria, Passau, and Saltzburg on the east, Tyrol on the south, Suabia on the west, Neuburg and the Upper Palatinate on the north. It was formed of Upper and Lower Bavaria, including, in round numbers, a territory of 12,000 square miles, and a population of 900,000 inhabitants.

Bavaria originally made a part of the Rhætia, Vindelicia, and Noricum, of the ancients; and received its Latin name Boiaria, or Bojoaria, from the Boii, a people of Celtic Gaul, who colonised it at an early period. These people were governed by native princes, till Charlemagne took possession of the country, and committed the government to some of his counts, and, on the partition of his imperial dominions amongst his grandsons, Bavaria was assigned to Louis the German. It bore the title of margraviate till the year 920, when Arnold, the reigning prince, was raised to the quality of duke. In 1623 Maximilian I., having assisted Ferdinand II. against his Bohemian insurgents, was elevated to the electoral dignity, after which few events of importance occurred till the year 1777, when the disputed succession, incident on the extinction of the reigning branch, produced a disposition in Austria to seize the whole electorate, and annex it to her dominions; a measure which was happily prevented by the prompt and energetic conduct of Frederic II. After the adjustment of the Austrian pretensions, the electorate enjoyed the blessings of peace till the French revolution, which involved all Germany in the flames of civil discord. The elector remained on the side of the imperialists till 1796, when the French marched a powerful army into his dominions, and concluded a treaty for the cessation of hostilities. The year following was signed the treaty of Campo-Formio, and in 1801 that of Luneville; by which all the German dominions left of the Rhine, were annexed to France, and the elector lost the palatinate of the Rhine, the duchies of Juliers and Deux Ponts, with all his possessions in the Netherlands and Alsace, receiving as indemnities the bishoprics of Freysingen, Bamberg, Augsburg, and Kempten, with ten abbeys, fifteen imperial towns, and two imperial villages, besides the western part of the bishopric and town of Passau. In the conflicts between France and the continental powers, Bavaria remained neuter till 1805, when the elector entered into an alliance with Napoleon, and was shortly afterwards raised to the dignity of king, and had his dominions enlarged by the annexation of several important provinces.

Shortly after the campaign of 1806, when Austria, to purchase peace, sacrificed part of her possessions, the kingdom of Bavaria received still a further enlargement, by the addition of Tyrol, Eichstadt, the eastern part of Passau, and other territories, when she began to assume a more important station amongst the surrounding states. Another alteration occurred at the dissolution of the Germanic constitution, and the formation of the Rhenish confederation, when the duchy of Berg was resigned for the margraviate of Anspach, together with the imperial towns and territories of Augsburg and Nuremburg. In 1809, Bavaria took part with France against Austria, and again shared the spoils of conflict; but subsequently ceded some of her territories to Wirtemburg and Wurtzburg; and by another alteration, which shortly followed, exchanged a great part of Tyrol for the acquirement of Bareuth and Ratisbon.

Before the political proceedings of October 1809 the extent of Bavaria was calculated at 36,770 English square miles, and the population at 3,231,570; and it furnished in time of war a contingent of 30,000 troops. But by the treaty concluded at that time, she acquired an additional erritory of 5550 square miles, and a population f 1,492,000, which augmented the Bavarian erritories to 42,320 square miles, and the popuation to 4,723,570.

When the love of military conquest, and the ntoxication of unparalleled success, induced apoleon to march the French armies to Mosow, the Bavarian troops were amongst those hich were destined never to return. The king f Bavaria now began to apprehend the conseuences of this expedition upon the future sucess of the French emperor, and just at the period f that eventful crisis entered into a treaty with he emperor of Austria, and joined the allies in reaking that thraldom under which a great part f Europe labored. These important services ere not forgotten, and in the subsequent negoiations, at the congress of Vienna, the title of ing was confirmed, part of the contribution oney paid by France was assigned him, and the upport of a body of Bavarian troops at the exense of France was agreed to. With respect to erritory, the remaining part of Tyrol was ceded o Austria. The grand duchy of Wurtzburg, the rincipality of Aschaffenburgh, and the greater art of the ci-devant French department of Mont onnere, were acquired; amounting to about 000 square miles, and more than half a million f inhabitants.

In 1810 Bavaria was divided into the followng circles:

Circles.	Chief Towns.
Upper Maine Lower Maine	Bamberg.
The Rezat	Anspach.
The Upper Danube	Eichstadt.
The Lower Danube	Passau.
The Regen	Ratisbon.
The Iller	Kempten.
The Iser	Munich.

The names of these circles are derived from he principal rivers of the several districts, and slight alteration in some of them has since ccurred. The subsequent acquisitions are as ollows:

The principality of Aschaffenburg	Aschaffenburg.
The grand duchy of Wurtzburg	Wurtzburg.
The circle of the Rhine, (late Mont Tonnere)	Landau.

The population of Bavaria is by no means qually distributed over its surface. The sides of he Danube, the lower districts of the grand uchy of Wurtzburg some districts of the margraiate of Anspach, with the recent acquisitions on he left bank of the Rhine, are much more thickly nhabited than the other parts. Indeed, much f the southern portion consists of rugged mounains and other tracts, which are scarcely fit for abitation, except in the valleys formed by the everal divisions of the Alps.

Surrounded as it is by other countries, from hich it is separated by mere arbitrary divisions, he outlines of Bavaria present nothing remarkable. The surface is greatly diversified, and the southern egions are mountainous and woody. The ground ear the Alps lies higher than the general area, orming an ascent, in which numerous lakes are embosomed, together with wastes and marshes, which have not yet been brought to any considerable pitch of cultivation. Much of the ancient palatinate swells into mountains, which are darkened with forests. The margraviate of Anspach is in part mountainous and sandy. But the extensive and fertile plains that stretch along the northern and central regions, and the wide valleys which lie to the north and north-east of Munich, and are watered by the rivers Inn and Iser, serve to vary the general surface, and relieve the natural features of the landscape.

Mountains and hills are numerous in Bavaria, especially in Anspach, and the neighbouring districts, together with the territories on the left bank of the Rhine. The Alps, branching off in a lofty chain, strike out the line of division between this kingdom and Tyrol; while the broken surface of Bohemia is bounded by an elevated range, the lateral branches of which diversify the surface of the adjacent regions.

Bavaria, from the position of its included area, is intersected by numerous rivers, which, for the most part, become tributary to the Danube. The Inn descends from the lofty regions of eastern Switzerland. Like its sister streams, it soon becomes a rapid river; and, having collected a great body of water, rolls north-east through the kingdom of Bavaria, and having formed the line of boundary between that state and Austria, falls into the Danube. The Iser and the Lech originate in the mountains and cascades of Tyrol, and flow through the southern regions of Bavaria. The former passes Munich, Mosburg, and Landshut, after which it falls into the Danube, opposite to Deckendorf; and the latter proceeds almost due north to the same receptacle. The Iller flows nearly parallel to the Lech, and joins the same parent river near the city of Ulm. The Nab rises in the range lying between Bohemia and Bavaria, and the Altmuhl in the higher parts of the margraviate of Anspach: the former joins the Danube, west of Ratisbon; and the latter a few miles higher up the stream. The Danube is the grand river of Bavaria, and intersects the whole kingdom, east and west, though not without a considerable sweep towards the north.

These rivers greatly refresh the herbage and terranean productions of the kingdom generally, besides answering, to a considerable extent, the important purposes of an inland navigation.

The largest lake is that of Ammer, lying at the foot of the Alps. Other lakes are found in different parts of the kingdom, but in general are not of sufficient importance to require distinct enumeration.

The climate and temperature of Bavaria are various, owing to its relative situation, and the different degrees of elevation observable upon its surface, by which it is rendered capable of producing all the necessaries of life, together with many of its luxuries. While the vine flourishes in one part, the fir attains maturity in another; but the native indolence of the inhabitants prevents their reaping all the advantages of their climate; and thousands of acres of good land lie completely unoccupied. The valleys are generally well watered, and possess a rich soil, while the upland territories are overspread with rocks and forests. The plains produce grain, fruit, wine, hops, &c. Flax is cultivated in the district of the Bavarian desert. Vines flourish on the banks of the rivers Danube and Iser; and much excellent fruit is grown in the vicinity of Landshut, although the most fertile parts are frequently spotted with oases and islands of sand, which seem at present to be incorrigible.

The mineral productions of Bavaria comprise copper, iron, marble, coal, gypsum, vitriol, and several kinds of argillaceous earth, the most noted of which is the species of clay of which the Passau crucibles are made. Iron and copper are the most important, and of the latter 3000 quintals are obtained annually. At Traunstein, near the confines of Saltzburg, are numerous rich salt-springs, which furnish employment to a great number of the inhabitants. Mineral waters are also common in Bavaria, but are generally considered inferior to those found in many other parts of Germany.

The margraviate of Anspach is noted for its superior breed of horses, which have been of late much improved by an intermixture with those of England. The same degree of attention has been bestowed upon their cattle, by an intermixture with the Swiss breed. The coarse wool of their native flocks has also been much improved, by the introduction of Marinos amongst the sheep, especially in Bavaria Proper. The wild animals of Bavaria are bears, wolves, lynxes, foxes, wild boars, &c. The rivers are well stocked with fish, and in some of them beavers are common.

The principal towns are Munich, Augsburg, Bamberg, Anspach, Bayreuth, Amberg, Wurtzburg, Eichstadt, Passau, Ingolstadt, and Nuremburg, together with some others of less note: as, Kempten, Freysingen, Landshut, Mosburg, Newburg, Nordlingen, Memmingen, Schweinfurt, Straubing, and others.

Munich, the capital, is seated on the river Iser, and in the year 1814, contained as many as 60,000 inhabitants, besides 18,659, who inhabited the suburbs, and 26,000 strangers, who were supposed to visit it annually. It is the centre of the most valuable national manufactures, and was rendered, by the concordat of 1817, the seat of an archbishop.

The general manufactures and commerce of Bavaria, are under a restrictive influence, from the native indolence of the inhabitants, together with the numbrous fasts and saints' days of the Roman church. Their manufactures, which include linen, woollen, and cotton cloths, iron, firearms, earthenwares, &c., are chiefly directed to the supply of their domestic wants. Augsburg has manufactures of paper, gold, silver, jewelry, and cotton. It is engaged in the transfer of goods between Germany and Italy, and is the general focus of exchange for the southern countries of Germany. Friedburg is noted for its clocks and watches. Philosophical instruments are made at Munich; and it was here that the art of lithography was discovered. Near Hohen Aschau is an iron mine, the largest in the kingdom, together with foundries and forges, the produce of which, with their grain, wood, wine, salt, and vitriol, form the chief exports.

The government of Bavaria is a constitutional monarchy. The National Assembly consists of two chambers; and no tax can be imposed, or general law enacted, without their consent. The first chamber consists of the nobles, bishops, &c., and the second of deputies chosen once every six years by the landholders, universities, boroughs, cities, and clergy. The crown is hereditary in the male line, and only transferable to the female in the event of total failure of male issue. Louis I., of Bavaria, is a liberal prince, and the kingdom has flourished by his policy. A royal commissioner presides over each of the circles into which the nation is divided; and commissaries of police are distributed in all the principal towns. A court of appeal also, is established in each circle, to which causes may be removed; and there is a supreme court at Munich, whose sentence is final. By the new constitution of Germany, according to the decisions of the late congress, Bavaria is made the first of its secondary kingdoms, possesses one vote in the federative diet and four in the general assembly.

The Bavarian army, during the late war, amounted to 60,000 men; but after the peace it was reduced to 40,000. The annual revenue is estimated at two millions; burdened, however, with a considerable debt.

The inferior kingdoms of Germany are of too little importance to become principals in any European war, but they are frequently found very effective allies. For instance, in case of war between France and Austria, the alliance of Bavaria with the former, would bring the French troops into the very heart of Germany; and with the latter, would conduct the Austrian troops to the very borders of France. It is in this light only that the political importance of this kingdom can be duly estimated: a practical illustration of which took place in 1813, when, during the crisis in which Napoleon was endeavouring to establish himself at Dresden, Bavaria declared in favor of the allies.

The prevailing religion of Bavaria is the Roman Catholic. The inhabitants were formerly considered some of the most intolerant in Europe, and the Bavarian bishops being independent princes, the power of the church knew no control; but by the diffusion of superior light, liberal sentiments began to prevail, the temporal authority of the ecclesiastics was abolishedin 1802, as were also many of the monastic institutions, and toleration was regarded as a civil right. There are now two archbishops, and four bishops; the former, according to a concordat agreed to by the Pope in 1817, are those of Munich and Bamberg, and the latter those of Augsburg, Wurtzburg, Ratisbon, and Eichstadt. The influence of the church is still greater in Bavaria than in any other part of Germany.

Bavaria has never risen to any remarkable distinction. Indeed the bigotry, ignorance, and intolerance, which formed the national character of the people, presented almost insurmountable obstacles to all liberal and enterprising views with respect to education, agriculture and commerce. The almost ceaseless train of saints' days, and holy days, seemed to breed nothing but indolence and superstition. Bavaria now begins to emerge from her long-cherished barbarism. Education is attended to; academies, lyceums, and universities, have been multiplied; productions of foreign literature have been imported, to excite the emulation of native genius, and the effects of these generous efforts have already shone forth, in the improved condition of society, and the gradual advance of moral and physical renovation. Much, however, yet remains to be done, especially in those regions which were most darkened by religious superstition. But, calculating upon the measures of the present government, the eye of anticipation looks through a train of consequences to the distant period when the mists shall disperse, the clouds clear up, and Bavaria aspire to an equality with the other kingdoms of Europe.

The language of the Bavarians is a dialect of the German, which, however, they have neglected to cultivate; travellers agree in describing them as the most sensual and phlegmatic of the German nations.

The Bavarians are in appearance a stout and vigorous race of men, well adapted to bear the fatigues of war. They resemble the Irish peasantry in their propensity to drink and quarrel; and their manners at the close of the last century were coarse in the extreme. Amidst all the dirt, indolence, and laxity of morals, which are here carried to excess, the Bavarian is, in general, faithful to his word; which is almost the only good feature that is at all prominent. Many of the females are lively, handsome, and graceful; but their charms are altogether personal, since intellectual cultivation is scarcely a subject of attention.

The antiquities and curiosities are few in number, but are calculated to awaken no ordinary feelings of interest and astonishment. In the capital, Munich, the objects most worthy of attention are the Cabinet of Natural Curiosities, the Library, the Arsenal, and the Ducal Gardens.

The Museum contains a complete series of busts of the Roman emperors, together with many other remarkable antiquities. Roman stations, roads, and coins, are frequent, and form, with the churches and castles, a charming collision of objects, highly interesting to the architect, the statuary, and the antiquarian. But all the works of art are more than eclipsed by the more magnificent wonders of nature. The scenes in the interior of the mountains have often awakened the astonishment of the traveller, and left him overwhelmed by the terror of the sublime; and no doubt many unexplored caverns yet remain which no human foot has ever trod. We shall select the following instance of these amazing recesses, as described by Mr. Parkinson, for the entertainment of the reader. It is to be found in his curious and valuable work The Organic Remains of a former World.

'Among the most remarkable of these caverns are those of Gaylenreuth, on the confines of Bayreuth. The opening to these, which is about seven feet and a half high, is at the foot of a rock of lime-stone, of considerable magnitude, and in its eastern side. Immediately beyond the opening is a magnificent grotto, of about 300 feet in circumference, which has been naturally divided by the form of the roof into four caves. The first is about twenty-five feet long and wide, and varies in height from nine to eighteen feet; the roof being formed into irregular arches. Beyond this is the second cave, about twenty-eight feet long, and of nearly the same width and height with the former. In this cave the stalactitic crust begins to appear, and in considerable quantity; but not in such quantity as in the third cave, which is beautifully hung, as it were, with this sparry tapestry. The roof now begins to slope downwards, so that in the next, the last of these caves, it is not above four or five feet in height. In the caves forming this first grotto fragments of bones are found, and it is said that they were as plentiful here as they now are in the interior grottoes.

'The passage into the second grotto is about six feet high, and fourteen feet wide. This grotto, which extends straight forward sixty feet from the opening, and is about forty feet wide, and at its commencement about eighteen feet high, would commodiously hold 200 men. Its appearance is rendered remarkably interesting, from the darkness of its recesses, and from the various brilliant reflections of the light from the stalactites with which its roofs and sides are covered. The constant drip of water from the roof, and the stalagmatic pillars on the floor, assist in perfecting the wonders of the scene. In this grotto no search was made for bones, on account of the thickness of the sparry crust.

'A low and very rugged passage, the roof of which is formed of projecting pieces of rock, leads to the third grotto; the opening to which is a hole, three feet high, and four feet wide. This grotto is more regular in its form, and is about thirty feet in diameter, and nearly round. Its height is from five to six feet. This grotto is very richly and fantastically adorned by the varying forms of its stalactitic hangings. The floor is also covered with a wet and slippery glazing, in which several teeth and jaws appear to have been fixed.

'From this grotto commences the descent to the interior caverns; within only about five or six feet an opening in the floor is seen, which is partly vaulted over by a projecting piece of rock. The desceut is about twenty feet, and occasioned to M. Esper and his companions some little fear, lest they should never return, but remain to augment the zoolithes contained in these terrific mansions. This cavern was found to be about thirty feet in height, about fifteen in width, and nearly circular; the sides, roof, and floor, displaying the remains of animals. The rock itself is thickly beset with teeth and bones; and the floor is covered with a loose earth, formed by animal decomposition, and in which numerous bones are imbedded.

'A gradual descent leads to another grotto, which, with its passage, is forty feet in length, and twenty feet in height. Its sides and top are beautifully adorned with stalactites. Nearly twenty feet further is a frightful gulph, the opening of which is about fifteen feet in diameter; and, upon descending about twenty feet, another grotto, about the same diameter with the former, but forty feet in height, is seen. Here the bones are dispersed about, and the floor, which is formed of animal earth, has great numbers of them imbedded in it. The bones which are here found seem to be of different animals; but in this, as well as in the former caverns, perfect and unbroken bones are very seldom found. Sometimes a tooth is seen projecting from the solid rock, through the stalactitic covering; showing that many of these wonderful remains may here be concealed. A specimen of this kind, which I possess, from Gaylenreuth, is rendered particularly interesting by the first molar tooth of the lower jaw, with its enamel quite perfect, rising through the stalactitic mass which invests the bone. In this cavern the stalactites begin to be of a larger size, and of a more columnar form.

'Passing on through a narrow opening in the rock, a small cave, seven feet long and five feet high, is discovered. Another small opening out of this leads to another small cave, from which a sloping descent leads to a cave twenty-five feet in height, and about half as much in its diameter, in which is a truncated columnar stalactite, eight feet in circumference.

'A narrow and difficult passage, twenty feet in length, leads from this cavern to another of twenty-five feet, which is everywhere beset with teeth, bones, and stalactitic projections. This cavern is suddenly contracted so as to form a vestibule of six feet wide, ten long, and nine high, terminating in an opening close to the floor, only three feet wide, and two high; through which it is necessary to writhe with the body on the ground. This leads into a small cave, eight feet high and wide, which is the passage into a grotto twenty-eight feet high, and about forty-three feet long and wide. Here the prodigious quantity of animal earth, the vast number of teeth, jaws, and other bones, and the heavy grouping of the stalactites, produced so dismal an appearance as to lead M. Esper to speak of it as a perfect model for a temple for a god of the dead. Here hundreds of cart-loads of bony remains might be removed, pockets might be filled with fossil teeth, and animal earth was found to reach to the utmost depth to which they dug. A piece of stalactite being here broken down, was found to contain pieces of bones within it, the remnants of which were left imbedded in the rock.

'From this principal cave is a very narrow passage, terminating in the last cave, which is almost six feet in width, fifteen in height, and the same in length. In this cave were no animal remains, and the floor was the naked rock.

'Thus far only could these natural sepulchres be traced; but there is reason to suppose that these remains were disposed through a greater part of this rock.' By what means such immense quantities of animal materials were accumulated in these subterraneous abodes remains totally inexplicable, and no reasonable conjectures have yet been offered on the subject.

BAVATA TERRÆ, i. e. a bavoch of land, an ancient division of land, in the highlands of Scotland, mentioned by the Regiam Majestatem, as containing thirteen acres, and distinguished from a smaller portion called davata terræ, a davoch of land, which contained only four aratra, or the eighth part of a bavata i. e. 1⅝

BAVAY, a small town of France, in the department of the north (late province of Hainault), to which the French retired after the battle of Malplaquet, in 1709. It was taken by the Austrians in 1792, but recovered the same year. This was anciently the capital of the Nervii; and a variety of Roman medals have been found in the neighbourhood. It has manufactories of woollen stuffs, stockings, and iron plate; and was ceded to France by the peace of Nimeguen, in 1678. It stands on the road from Maubeuge to Valenciennes, about eight miles north-east of Quesnoy, and nearly thirty east of Douay.

BAUBEE'. A Scottish word for a halfpenny. This coin, bearing the head of James the VIth king of Scotland, when young, has been supposed by some to have been therefore called *baubee*, as exhibiting the figure of a baby. But Dr. Jamieson says this is a great mistake; the name, as well as the coin, being known before that prince's reign. Mr. Pinkerton derives it from the French *bas-billon*, or the worst kind of billon.

> Though in the drawers of my Japan bureau,
> To Lady Gripeall I the Cæsars show,
> 'Tis equal to her Ladyship or me
> A copper Otho, or a Scotch *baubee*.
>
> *Bramston's Man of Taste.*

> And as to her false accusation of spoil, we did remit us to the conscience of Mr. Robert Richardson, master of the coining-house, who from our hands received silver, gold, and metal, as well coined as uncoined, so that with us there did not remain the value of a *baubee*, or farthing.
>
> *Knox. History of the Reformation of Scotland.*

BAUCHERVILLE, a port in lower Canada, on the south bank of the St. Lawrence, opposite Montreal. It is beautifully situated, and remarkable as the retreat of several of the old French nobles, who spend their small incomes in a little society of their own.

BAUCIS, in fabulous history, a woman who lived with Philemon her husband, in a cottage in Phrygia. Jupiter and Mercury, travelling in the country, were well received by them, after having been refused entertainment by every-body else. To punish the people for their inhumanity, these gods laid the country waste with water; but took Baucis and Philemon with them to the top of a mountain, where they saw the deluge, and their own little hut above the waters, turned into a temple. They desired to officiate in this temple as priest and priestess, and that they might die both together, which were granted them.

BAUCONICA, in ancient geography, a town of the Vangiones in Gallia Belgica, supposed to be the present OPPENHEIM, which see.

BAUD, a town of France in Brittany, the head of a canton in the department of Morbihan, arrondissement of Pontivy. Population 6200. 18 miles north-west of Vannes.

BAUDEKIN, BALDICUM, and BALDAKINUM, in our old writers, a cloth of gold, or tissue, upon which figures in silk, &c. were embroidered. Some writers regard it as only a cloth of silk.

BAUDELOT (Charles Cæsar), a learned advocate of Paris, was distinguished by his skill in ancient monuments; he was received into the Academy of Belles Lettres in 1705. He wrote a Treatise on the Advantages of Travelling; Letters and

Dissertations on Medals, &c; and died in 1722, aged seventy-four.

BAUDIER (Michael), of Languedoc, lived in the reign of Louis XII., and wrote 1. An Inventory of the General History of the Turks; 2. The History of the Seraglio; 3. Of the religion of the Turks; 4. Of the Court of the King of China; and 5. The Life of Cardinal Ximenes, &c.

BAUDISSERITE, in mineralogy, a compound mineral, found at Baudissero in Piedmont, composed principally of silver and magnesia. It passes into Meerschaum, or sea froth, of which bowls of pipes for smoking are frequently made.

BAUDIUS (Dominic), a professor of history in the university of Leyden, born at Lisle, in 1561. He studied at Aix-la-Chapelle, Leyden, and Geneva, and was admitted L. L. D. in 1585. Soon after, he accompanied the ambassadors from the states to England, where he became acquainted with Sir Philip Sidney. He was admitted advocate at the Hague in 1587; but being soon tired of the bar, went to travel in France, where he remained ten years, and was much esteemed. Through the influence of Achilles de Harlai, first president of the parliament of Paris, he was admitted advocate of the parliament of Paris in 1592. In 1602 he went to England with Christopher de Harlai, the president's son, who was sent ambassador to London from Henry IV., but being soon after appointed professor of eloquence at Leyden, he settled in that university. Here he read lectures on history, and on the civil law. In 1611 the states conferred on him, in conjunction with Meursius, the office of historiographer, and in consequence he wrote The History of the Truce. He was an elegant prose writer, as appears from his letters, many of which were published after his death, and also an excellent Latin poet. His poems were first printed in 1587, and he published separately a book of Iambics in 1591, dedicated to Cardinal Bourbon. He died at Leyden in 1613.

BAUDOBRIGA, in ancient geography, a town of the Treveri in Germany, now Boppart, in the electorate of Triers. See BOPPART.

BAUDRAND (Michael Antony), a celebrated geographer, born at Paris in 1633. He travelled into several countries, and then applied himself to the revisal of Ferrarius' Geographical Dictionary, which he enlarged by one half. He wrote, 1. Notes to Papirius Masson's description of the Rivers of France; 2. A Geographical and Historical Dictionary; 3. Christian Geography, or an account of the Archbishoprics and Bishoprics of the whole world; and made several maps. He died at Paris, May 29, 1700.

BAUERA, in botany, a genus of plants, class polyandria, order digynia. Its generic characters are: CAL. inferior eight-fid: COR. eight petals, capsule bilocular, many seeded. The species are, 1. B. rubiæfolia madder-leaved Bauera B. rubioides; Audr. Repos. t. 198, Curt. Mag. t. 715. Venten. Malmais. t. 96. Native of New South Wales, first discovered in that country by Sir Joseph Banks. It requires the shelter of a green-house, or conservatory, and flowers during most part of the summer and autumn. Another species is mentioned by the name of B. humilis, in Ait. Epit. 364, as introduced at Kew, from New Holland in 1805, and flowering in June and July.

BAUGE, a drugget manufactured in Burgundy, with thread spun thick, and coarse wool.

BAUGÉ, a small town of France, in the department of the Mayenne and Loire, and late province of Anjou, famous for the victory gained by Charles VII. over the English in 1421. It is seated on the Coesnon, twenty-two miles east by north of Angers, and has about 3000 inhabitants.

BAUHIN (Casper, or Gaspar), an eminent anatomist and botanist, born at Basil in 1550. In 1580, he was chosen first professor of these sciences at Basil, and in 1614 was first professor of physic, and first physician of that city, a distinction which he held till his death, in 1623. He wrote, 1. Anatomical Institutions; 2. Prodromus Theatri Botanici, and other works.

BAUHIN (John), elder brother to Caspar, a great botanist, was born about the middle of the sixteenth century. He took his doctor's degree in physic in 1562, and afterwards became principal physician to Frederick duke of Wirtemburg. The most considerable of his works is his Universal History of Plants.

BAUHINIA, MOUNTAIN EBONY, in botany, a genus of the monogynia order, and decandria class of plants, ranking in the natural method under the thirty-third order, lomentaceæ: CAL. quinquefid, and deciduous; the petals, oblong expanded, and clawed, the superior one more distant, all inserted on the calyx; the capsule, a legumen. There are 10 species, which are propagated by seeds, and must be sown in hot-beds, and are reared in a bark stove. The most remarkable are: 1. B. aculeata, with a prickly stalk, common in Jamaica and other American sugar islands, where it rises to sixteen or eighteen feet, with a crooked stem. 2. B. acuminata, with oval leaves, a native of both the Indies, rising with several pretty strong, upright, smooth stems, sending out slender branches, garnished with oval leaves divided into two lobes. 3. B. divaricata, with oval leaves, whose lobes spread different ways. This grows naturally in great plenty on the north side of the island of Jamaica. 4. B. tomentosa, with heart-shaped leaves, a native of Campeachy; and rises to twelve or fourteen feet, with a smooth stem dividing into many branches. 5. B. variegata, with heart-shaped leaves, and lobes joining together, is a native of both the Indies. It rises with a strong stem upwards of twenty feet, dividing into many strong branches.

BAV'IAN. The same as *babian*. A baboon or monkey; an occasional but not a regular character in the old morris dance. From Dut. *baviaan*, Germ. *pavian*, a great monkey. He appears in act iii. scene 5, of The Two Noble Kinsmen, where his office is to bark, to tumble, to play antics, and exhibit a long tail with what decency he could. So *babouin* in French, and our *baboon*.

> Where's the *bavian*?
> My friend, carry your tail without offence
> Or scandal to the ladies, and be sure
> You tumble with audacity and manhood;
> And when you bark, do it with judgment.
>
> *Beaumont and Fletcher.*

BAV'IN. Brushwood, or small faggots, made of such light and combustible matter, used for lighting fires. Still in use in some counties.

> The skipping king, he ambled up and down,
> With shallow jesters and rash *bavin* wits,
> Soon kindled and soon burnt.
>
> *Shakspeare. Henry IV.*

> *Bavins* will have their flashes, and youth their fancies, the one as soon quench'd as the others are burnt. *Mother Bombie,* 1594.

BAVIUS and **Mævius**, two wretched poets of ancient Rome, who have been

> 'Damn'd to everlasting fame,'

in that severe line of Virgil:

> Qui Bavium non odit amet tua carmina Mævi.

BAULEAH, a considerable town of Bengal, in a very fertile country, to the north-east of the Ganges. The East India Company have here a very extensive factory for silk, which supplies a third part of that material exported from Bengal.

BAULOT, or **Beaulieu**, famous for his operations in lithotomy. He was born in 1651, of parents in low circumstances, and he entered early into the army; but after he had been some time a soldier, he got acquainted with an empirical surgeon, who pretended to cure the stone; and having received some lessons from this man, he assumed the monastic habit, though he belonged to no religious order, calling himself brother James. Thus he travelled through various provinces, and performed various operations; and at last went to Paris. Here his practice was disapproved of at first; but having been successful in curing a boy, his patients soon after became numerous. After extracting the stone he left the wound to heal of itself. The famous Cheselden adopted and improved upon brother James's method. He died in 1720.

BAUM, in botany. See Melissa.

Baum, Bastard. See Melittis.

Baum, Shrubby. See Molucca.

BAUMAN Isles, a cluster of islands in the South Pacific Ocean, discovered in 1722, by the person whose name they bear, in his voyage round the world with M. Roggewein. They lie in 12° of south latitude, and 173° of west longitude. The largest is about twenty miles in circumference; and the inhabitants were found to manifest a gentle and friendly disposition.

BAUMANNIANA, in entomology, a species of phalæna (tortrix) that inhabits Austria. The anterior wings are yellow, with two ferruginous anastomising bands bordered with silver; posterior one interrupted.

BAUMANSHOPLE, a remarkable cavern in the Brunswick states, principality of Blankenburg, Germany, situated in a steep rock near Rubeland. It consists of six or seven vaults, communicating by narrow apertures, and filled with stalactitic petrifactions, arranged in a thousand fantastic forms. No one has ever penetrated to the bottom, on account of the dampness and impurity of the air, which extinguishes all lights.

BAUME (Antony), an eminent French chemist towards the close of the last century, who distinguished himself by his opposition to the theory of Lavoisier, and his colleagues. He practised as an apothecary at Paris, and was, in 1775, chosen a member of the Royal Academy of Sciences. On the establishment of the National Institute, he was also one of its members. His principal works are a Treatise on Theoretical and Experimental Chemistry, and a Manual of Pharmacy. He also wrote a Memoir on Argillaceous Earths; a Dissertation on Æther, &c. He died in 1805. He also wrote a great many articles in the Dictionnaire des Arts et Métiers.

Baume-les-nones, a town of France, the head of an arrondissement, in the department of the Doubs, seated on the river of that name, and having 2500 inhabitants. Five miles from this town is a remarkable cavern, containing a small brook, said to be frozen in summer, but not in winter. When the peasants perceive a mist rising out of this cave, they know that it will rain the next day. Before the revolution there were here two famous abbeys, one for males, the other for females. Sixteen miles north-east of Besançon. Long. 6° 25′ E., lat. 47° 21′ N.

BAUNACH, or **Paunach**, a market town of Bavaria, capital of the district of Gleusdorf, circle of the Maine. It is situated at the influx of a small river of the same name into the Maine, and lay formerly in the principality of Bamberg, in Franconia. Here is a bridge across the latter river, and the surrounding country is rich in corn and wine. Seven miles north of Bamberg.

BAVOSA, in ichthyology, a name given by Italians to a species of the ray fish, now called leviraia, and raia oxyrynchus, and by earlier authors, raja bos, bos marinus, and leioraia. It is distinguished by Artedi as the variegated ray, with ten prickly tubercles on the middle of the back. See Pholis.

BAUR (Frederick William Von), a Russian general, born in the county of Hessian Hanau. He very early entered on a military life, and, in 1755, was in the British service as an officer of Hessian artillery. In 1757 he was advanced to the rank of general and engineer; and was afterwards ennobled by Frederick II. of Prussia. He entered into the service of Catharine II. empress of Russia, in 1769, and was by her appointed director of the salt works in Novogorod. He also superintended two great works, the supplying of Moscow with water, and deepening the canal near Petersburg, at the end of which he constructed a commodious harbour. He died in 1783. He wrote Memoires Historiques et Geographiques sur la Valachie, &c. 8vo.; and constructed the Carte de Moldavie, pour servir de la Guerre entre les Russes et le Turcs, in seven sheets.

BAURAC, an ancient name for nitre, and some other salts, confusedly called nitre. The Arabians give the name to tincar or tincal, which, when refined, is called borax, but when rough, in little crystalline masses, like the small crystals of sal gem, mixed with earth or other impurities, it is called tincal.

BAUTRU, a celebrated wit, and one of the first members of the French academy, was born at Paris in 1588, and died there in 1665. He was the delight of the whole court, but while he played the buffoon, took the usual privilege of saying what he pleased. Many of his bon mots are preserved. Once, when in Spain, having been to see the famous library of the Escurial, where he found a very ignorant librarian, the king of Spain asked him what he had remarked? Bautru replied, that 'the library is a very fine one; but your majesty should make your librarian treasurer of your finances.' 'Why so?' 'Because,' said Bautru, 'he never touches what he is entrusted with.'

BAUTZEN, or BUDISSEN, a considerable town of Germany, the capital of Upper Lusatia, in the kingdom of Saxony, with a strong citadel. It is seated on the river Spree, thirty miles east by north of Dresden. Including the suburb of Seidau, it contains a population of 11,000 or 12,000, most of whom are employed in manufactures, of which the principal are paper, cloth, linen, leather, and stockings. The provincial diet assembles at Bautzen, which is also the seat of the central post office. One half of the parish church is given to the Catholics, and the other to the Lutherans, the latter of whom are about three-fourths of the inhabitants. Here is also a collegiate establishment, called the provostship of St. Peter, all the members of which are Catholics, except the head, who is a Lutheran. The funds of this institution are extensive; and it possesses large tracts of land, both in Saxony and Bohemia. The town-hall, academy, orphan-house, ingenious water machines, as well as the public walks, are worthy of attention. Bautzen has suffered much by fire, particularly in the years 1709, 1760, and 1767. It was also the scene of a bloody conflict between the French and allies in 1813, in which the former were victorious. The language of the Wendens, or descendants of the ancient Vandals, is spoken at Bautzen nearly as much as the modern German.

BAW'BLE, } *Bauble*, or *bable*, *s.* Low Lat.
BAW'BLING. } *baubella*; but that word being found only in Hoveden, it is probable that the English may be the original, and the contrary; perhaps both are from the Fr. *babiole*. *Baciballum* is found in Petronius Arbiter in a similar sense; and *βυβαλια* in Julius Pollux, vol. 16, for bracelets.—*Nares*. Skinner suggests that it may be from *babe*, Ital. *babolo*, an infant; q. d. an infant's plaything. Any pretty, showy, trifling toy. It was anciently used to signify the badge of a fool. In its general signification the word is still current, but the office of a fool being obsolete, it requires, in the latter sense, some explanation. A fool's *bawble* was a short stick, with a head ornamented with asses' ears, fantastically carved upon it.

An idiot holds his *bauble* for a god,
And keeps the oath which by that god he swears.
Shakspeare. Titus Andronicus.

It had been fitter for you have found a fool's coat, and a *bauble*. *Lingua, O. Pl.* v. 129.

If every fool should wear a *bable*, fewel would be dear. *Ray's Prov.* p. 108.

It was also the subject of another proverb, which, as well as several allusions made to it, was of a licentious nature. It appears by the French proverb, subjoined by Ray, that the equivalent word in that language was *marotte*, which is now used for a person's particular foible, or hobby-horse, *C'est-là sa marotte;* it is his hobby-horse. It is in general whether applied to persons or things, a term of contempt.

And hapneth that the kynges foole,
Sat by the fire upon a stole,
As he that with his *bable* plaide,
And yet he heard all that thei saide,
And thereof toke thei no hede.
Gower. Conf. Ann.

In the reproof of chance
Lies the true proof of men: the sea being smooth,
How many shallow *bauble* boats dare sail
Upon her patient breast, making their way
With those of nobler bulk?
But let the ruffian Boreas once enrage
The gentle Thetis, and anon behold
The strong-ribb'd bark through liquid mountains cut,
Bounding between the two moist elements,
Like Perseus' horse: Where's then the saucy boat,
Whose weak untimber'd sides but even now
Co-rival'd greatness? either to harbour fled,
Or made a toast for Neptune. Even so
Doth valour's show, and valour's worth divide
In storms of fortune. *Shakspeare.*

A *bawbling* vessel was he captain of,
For shallow draught, and bulk, unprizable;
With which such scathful grapple did he make,
With the most noble bottom of our fleet. *Id.*

Paper!
Black as the ink that's on thee; senseless *bauble*,
Art thou a feodary, for this act, and look'st
So virgin-like without. *Id.*

When a man begins truly to fear God, and is in the agonies of mortification, all these new-nothings and curiosities will lye neglected by as *baubles* do by children when they are deadly sick. *Taylor's Sermons.*

For who without a cap and *bauble*,
Having subdued a bear and rabble,
And might with honour have come off,
Would put it to a second proof. *Hudibras.*

He (Cromwell) commanded a soldier to seize the mace: 'What shall we do with this *bauble?* Here, take it away. It is you,' said he, addressing himself to the house, 'that have forced me to this, I have sought the Lord, night and day, that he would rather slay me than put me upon this work.'
Hume's History of England.

If, in our contest, we do not interchange useful notions, we shall traffick toys and *baubles*.
Government of the Tongue.

This shall be writ to fright the fry away,
Who draw their little *bawbles*, when they play.
Dryden.

A lady's watch needs neither figures nor wheels;
'Tis enough that 'tis loaded with *bawbles* and seals.
Prior.

Our author then, to please you, in your way,
Presents you now a *bawble* of a play,
In gingling rhyme. *Granville.*

A prince, the moment he is crown'd,
Inherits every virtue round,
As emblems of the sovereign pow'r,
Like other *bawbles* of the tow'r. *Swift.*

Whate'er was light, impertinent, and vain,
Whate'er was loose, indecent, and profane,
(So ripe was folly, folly to acquit),
Stood all absolv'd in that poor *bauble*, wit.
Churchill. Gotham, bk. iii.

BAW'COCK. A burlesque word of endearment, supposed to be derived from *beau coq*; but rather perhaps from *boy* and *cock*. It seems to mean young cock, or fine fellow.

Why that's my *bawcock*. What has smutch'd thy nose? *Shakspeare.*

Good *bawcock*, bate thy rage! use lenity, sweet chuck. *Id. Henry IV.*

BAWD', *v.*, *n. s.* & *adj.*
BAWD'ILY,
BAWD'INESS,
BAWD'RY,
BAWD'SHIP,
BAWD'Y.

Either from *baude*, which signifies joyous, from *baudy*, dirty, or from the Goth. *bauyan*, to scrape together, thus *bawd* is a collector of filth, or obscenity. The French have *bauderie*, *baudrie*, that is pimping, keeping a bawdy-house. It refers to obscenity of language, and of intercourse. A bawd is either a male or female pander. It is more frequently applied, however, to the depraved mother in the trade of debauchery, who either facilitate the illicit intercourse of the sexes, as procuresses, or as furnishing them with a place of meeting. Johnson says, somewhat coarsely, that *bawdry* is a wicked practice of procuring and bringing whores and rogues together.

This false theef, this sompnour quod the frere,
Had alway *baudes* redy to his hond,
As any hawke to lure in Englelond.
Chaucer. The Freres Tale.

This thing is wonder mervaillous to me,
(Sin that thy lord is of so high prudence,
Because of which men shulde him reverence,)
That of his worship rekketh he so lite
His overest sloppe it is not worth a mite,
As in effect to him so mote I go;
It is all *baudy* and to sore also. *Id.*

But here, with al mine herte, I thee beseche
That never in me thou deme soche folie,
As I shall saine—Methought by thy speche,
That this whiche thou me doest for companie,
I should wenen it were a *bauderie*:
I am not wode, all if I leud ybe:
It is not so, that wote I well parde. *Id.*

H'yll hang handsome young men for the soote sinne of love,
When so his knavery himselfe a *bawdy* Jack doth prove. *Whetstone. Old Play.*

Besides, *bawdry* is become an art, or a liberal science, as Lucian calls it; and there be such tricks and subtleties, so many nurses, old women, panders, letter-carriers, beggars, physicians, friars, confessors, employed about it; such occult notes, stenography, polygraphy, nuntius animatus, or magnetical telling of their minds, which Cabeus, the Jesuit, by the way, counts fabulous and false; cunning conveyances in this kind, that neither Juno's jealousie, nor Danae's custody, nor Argo's vigilancy can keep them safe. *Burton. Anat. of Mel.*

The eye is a secret orator, the first *bawde*, amoris porta, and with private looks, winking, glances, and smiles, as so many dialogues they make up the match many times and understand one another's meanings before they come to speak a word. *Id.*

Thy sin's not accidental, but a trade:
Mercy to thee would prove itself a *bawd*:
'Tis best that thou diest quickly. *Shakspeare.*

She says enough;—yet she's a simple *bawd*,
That cannot say as much. *Id.*

Come, sing me a *bawdy* song; make me merry; I was as virtuously given as a gentleman need to be; virtuous enough: swore little; diced not above seven times a week; went to a *bawdy*-house, not above once in a quarter—of an hour; paid money that I borrowed, three or four times; lived well, and in good compass: and now I live out of all order, out of all compass. *Id.*

HEART. For my part I have once escaped—and when I wed again, may she be—ugly as an old bawd.
VAINL. Ill-natured, as an old maid—
BELMOUR. Wanton as a young widow—
SHARP. And jealous as a barren wife.
Congreve. Old Bachelor.

Now nothing left, but wither'd, pale, and shrunk,
To *bawd* for others, and go shares in punk. *Pope.*

You may generally observe, that the appetites are sooner moved than the passions. A sly expression, which alludes to *bawdry*, puts a whole row into a pleasing smirk; when a good sentence that describes an inward sentiment of the soul, is received with the greatest coldness and indifference. *Spectator.*

Has the pope lately shut up the *bawdy*-houses, or does he continue to lay a tax upon sin? *Dennis.*

BAWDY-HOUSE. The keeping of a house of ill-fame is cognizable by the temporal law, as a common nuisance, not only because it endangers the public peace by drawing together dissolute and debauched persons, and promoting quarrels, but because it tends to corrupt the manners of the people by an open profession of lewdness (3 Inst. 205. 1 Hawk. P. C. c. 74). Those who keep bawdy-houses are punished with fine and imprisonment, and also such infamous punishment as the court shall inflict; and so is a lodger, who keeps only a single room for such purposes. Also persons resorting to a bawdy-house are punishable, and may be bound to their good behaviour. If a constable receives information that a man and woman are gone to a lewd house, he may carry them before a justice of peace without any warrant, and the justice may bind them over to the sessions. In London, they may carry them to prison; and by the custom of the city, whores and bawds may be carted. By stat. 25 Geo. II. c. 36, made perpetual by stat. 28 Geo. II. c. 19, if two inhabitants, paying scot and lot, shall give notice to a constable of any person keeping a bawdy-house, the constable shall go with them before a justice of peace, and shall, upon the oath of such inhabitants, that they believe the contents of such notice to be true, and their entering into a recognizance of £20 each, to give material evidence of the offence, enter into a recognizance of £30 to prosecute with effect such person for such offence at the next sessions. The constable shall be paid his reasonable expenses by the overseers of the poor, ascertainable by two justices; and upon conviction of the offender, the overseers shall pay the two inhabitants £10 each. A constable, neglecting his duty, forfeits £20. Any person appearing as master or mistress, or as having the care or management of any bawdy-house, shall be deemed the keeper of it, and liable to be punished as such. And a wife may be indicted and set in the pillory with her husband for keeping a brothel; for this is an offence respecting the domestic economy and government of the house, in which the wife has a principal share.

BAWD-MONEY, a name given to the aleum athamanticum.

BAW'DRICKS, *n.* See BALDRICK. Bald, *belt*, according to Du Cange, is the ring, belt, or girdle of a bold man, that is of a warrior. The word is used by Sir Thomas More, by Hall, and by Fabian, and is spelt by them variously, *baudrick*, *baudryck*, and *bawderyke*.

And in her hand a sharp bone spear she held,
And at her backe a bow and quiver gay,
Stuft with steel-headed darts, wherewith she queld
The salvage beasts in her victorious play,
Knit with a golden *bauldrick*, which forelay
Athwart her snowy breast. *Spenser. Faerie Queene.*

Fresh garlands too the virgins' temples crown'd;
The youths gilt swords wore at their thighs, with silver
bawdricks bound. *Chapman's Iliad.*

BAWL, *v. a.* & *n.*
Bawling,
Bawler, *n.*
Vossius and Festus concur in thinking that this word is formed, a sono vocis, from the sound of the voice; Minshew and Skinner conjecture that it is from the noise which dogs make in barking; and Johnson derives it from the Latin *balo*, to hoot, to cry with great vehemence, whether for joy or pain; to cry as in the market place, either wares or news; a word always used in contempt.

They *bawl* for freedom in their senseless mood,
And still revolt when truth would set them free.
Milton.

To cry the cause up heretofore,
And *bawl* the bishops out of door. *Hudibras.*

Through the thick shades th' eternal scribler *bawls*,
And shakes the statues on their pedestals. *Dryden.*

From his lov'd home no lucre him can draw;
The senate's mad decrees he never saw,
Nor heard at *bawling* bars corrupted law. *Id.*

Loud menaces were heard, and foul disgrace,
And *bawling* infamy, in language base,
Till sense was lost in sound, and silence fled the
place. *Id. Fables.*

So on the tuneful Margarita's tongue
The list'ning nymphs and ravish'd heroes hung;
But cits and fops the heav'n-born musick blame,
And *bawl*, and hiss, and damn her into fame. *Smith.*

I have a race of orderly elderly people, who can *bawl* when I am deaf, and tread softly when I am only giddy and would sleep. *Swift.*

It grieved me when I saw labours which had cost so much, *bawled* about by common hawkers. *Id.*

Fie; fie miss, how you *bawl!*—Besides, I have told you, you must not call me mother. *Congreve.*

A little child was *bawling*, and a woman chiding it. *L'Estrange.*

If they were never suffered to have what they cried for, they would never, with *bawling* and peevishness, contend for mastery. *Locke.*

My husband took him in, a dirty boy; it was the business of the servants to attend him, the rogue did *bawl* and make such a noise.
Arbuthnot's History of John Bull.

When rosemary and bays, the poet's crown,
Are *bawl'd* in frequent cries through all the town,
Then judge the festival of Christmas near
Christmas! the joyous period of the year. *Gay.*

BAWLING, among sportsmen, is spoke of the dogs when they are too busy before they find the scent good.

BAWM. See Balm. *Bawmed*, used by R. Brunne.

BAWN, *n.* in the Gothic *bauan*, Germ. *bauen*, a place to reside in; a dwelling; any edifice, whether a fortification or a common habitation, and with whatever materials constructed; it is used by Spenser for an eminence. In Ireland, says Todd, a *bawn* is said to be a place near the house, inclosed with mud or stone walls, to keep the cattle from being stolen in the night.

But these round hills and square *bawnes*, which you see so strongly trenched and thrown up, were (they say) at first ordained for the same purpose, that people might assemble themselves therein, and, therefore, aunciently, they were called folkmotes, that is, a place of people, to meete or talke of any thing that concerned any difference between parties and townships, which seemeth yet to me very requisite.
Spenser. View of the State of Ireland.

Thus spoke to my lady the knight full of care,—
Let me have your advice in a weighty affair;
This Hamilton's *bawn*, whilst it sticks on my hand,
I lose by the house what I get by the land;
But how to dispose of it to the best bidder,
For a barrack or malt-house, we now must consider.
Swift. The Grand Question Debated.

BAWTREY, or Bawtry, a market town and chapelry, in the parish of Blythe, West Riding of York. It stands near the river Idle, eight or ten miles from its fall into the Trent: is nine miles south-east from Doncaster, and 153 from London, and contains from 900 to 1000 inhabitants. This place has much trade from its river navigation, having mill and grindstones from Derbyshire, and lead, and all kinds of iron manufactures, from Sheffield. It is a great thoroughfare to Scotland, and has a good market on Thursday, formerly on Wednesday.

BAXTER (Andrew), an ingenious metaphysical writer, was born in 1686 or 1687, at Old Aberdeen, and educated at King's College. About 1724 he married the daughter of a clergyman in Berwickshire. A few years after, he published in 4to, An Inquiry into the Nature of the Human Soul, wherein its immateriality is is evinced from the principles of reason and philosophy. In 1741 he went abroad with Mr. Hay, and resided some years at Utrecht; having there Lord Blantyre also under his care. He made excursions from thence into Flanders, France, and Germany; his wife and family residing, in the mean time, chiefly at Berwick. In 1737 he returned to Scotland, and resided till his death at Whittingham, in the shire of East Lothian. He drew up, for the use of his pupils and his son, a piece entitled Matho: sive, Cosmotheoria puerilis, dialogus. In quo prima elementa de mundi ordine et ornatu proponuntur, &c. This was afterwards greatly enlarged, and published in English, in two volumes, 8vo. In 1750, he published an Appendix to his Inquiry. He died April 23, 1750, after suffering for some months under a complication of disorders.

Baxter, (Richard), an eminent nonconformist divine, was born at Rowton in Shropshire, in 1615. He was somewhat unfortunate in his tutors, who were either men of little ability, or very inattentive to their charge; but his own genius and perseverance surmounted this obstacle; and he was distinguished in early life for his learning, as well as his piety. He was ordained in 1638, and upon the opening of the long parliament, was chosen vicar of Kidderminster. In the heat of the civil wars he withdrew to Coventry, and preached to the garrison and inhabitants. When Oliver Cromwell was made protector, he would not comply with his measures, though he preached once before him. He came to London just prior to the deposing of Richard Cromwell, and preached before the parliament the day before they voted the return of King Charles II. Upon the Restoration he was appointed one of the king's chaplains in ordinary. He assisted at the conference in the Savoy, as one of the commissioners for the settlement of religion, and drew up a reformed liturgy. About this time he was offered the bishopric of Hereford, which he refused; and desired only to resume his charge at Kidderminster. He was not, however, permitted to preach there above twice or thrice after the Restoration. On this he returned to London, and preached occasionally about the city, till the act of uniformity took place. In 1662 he married Margaret, daughter of Francis Charleton, Esq. of Salop, a justice of the peace. She was a woman of great piety, and entered fully into her husband's views concerning religion. During the plague in 1665, he retired into Buckinghamshire; but afterward returned to Acton, where he staid till the act against conventicles expired; and then his audience was so large that he wanted room. Soon after we find him imprisoned, but procuring an habeas corpus, he was discharged. After the indulgence in 1672 he returned to London; and in 1682 he was once more incarcerated and put to great expense. In 1684 he was again apprehended, and at the commencement of the reign of James II. was tried before justice Jefferies, for his Paraphrase on the New Testament; which was called a scandalous and seditious book against the government. He continued in prison two years; from whence he was discharged, and had his fine remitted by the king. He died in 1691; and was buried in Christ Church. One of his biographers says, rather boldly, of Richard Baxter, 'he could say what he would, and he could prove what he said.' He was honored, however, with the friendship of the earl of Lauderdale, the earl of Balcarras, L. Chief Justice Hales, Drs. Tillotson, Barrow, &c. and held correspondence with the most eminent foreign divines. He himself wrote above 120 books, and had above sixty written against him. Barrow says, that 'his practical writings were never mended, and his controversial seldom confuted.' Granger declares that he was a man famous for weakness of body and strength of mind; for having the strongest sense of religion himself, and exciting a sense of it in the thoughtless and profligate; for preaching more sermons, engaging in more controversies, and writing more books, than any other nonconformist of his age. He spoke, disputed, and wrote with ease; and discovered the same intrepidity when he reproved Cromwell and expostulated with Charles II. as when he preached to a congregation of mechanics. His portrait, in full proportion, is drawn in his Narrative of his own Life and Times; which though a rhapsody, composed in the manner of a diary, contains a great variety of memorable things, and is itself, as far as it goes, a History of Nonconformity. His most famous works were, 1. The Saint's Everlasting Rest. 2. Call to the Unconverted, of which 20,000 have been sold in one year; and which has been translated into all the European languages. 3. Poor Man's Family Book. 4. Dying Thoughts; and the above-mentioned Paraphrase. His practical works have been printed in four volumes folio. See BAXTERIANS.

BAXTERIANS, in ecclesiastical history, those who adopt the doctrinal sentiments of Richard Baxter. The opinions maintained by this excellent man were conciliatory, and have, since his time been embraced by many moderate and candid men, of different sects and parties. Baxter's system was formed not to inflame the passions and widen the breaches, but to heal those wounds of the church under which she had long languished. Some controversialists, however, were much displeased with Baxter's attempt; and we have heard of a piece in which supposed inconsistencies in his doctrines are set in a kind of battle-array against each other;—it is entitled Richard against Baxter.

The Baxterian strikes into a middle path, between Arminianism and Calvinism, and thus endeavours to unite both schemes. With the Calvinist, he professes to believe that a certain number, determined upon in the divine councils, will be infallibly saved; and with the Arminian, he joins in rejecting the doctrine of reprobation as absurd and impious; admits that Christ, in a certain sense, died for all, and supposes that such a portion of grace is allotted to every man as renders it his own fault if he doth not attain to eternal life.

BAY, } BAYS. } The name of the tree which is translated laurel, and of which honorary garlands were anciently made. Fr. baye, a berry, Lat. *bacca*. To wear the *bays*, is, in poetical language, to be pre-eminent in excellence. The honorary crown or garland, which was bestowed as a prize for literary or military, or indeed any other species of merit, bearing this name.

I have seen the wicked in great power, and spreading himself like a green *bay*-tree. *Bible.*

See where she sits upon the grassie greene,
(O seemely sight!)
Yclad in scarlet, like a mayden queene,
And ermines white:
Upon her head a cremosin coronet,
With damaske roses, and daffadillies set;
Bay-leaves betweene,
And primroses greene,
Embellish the sweete violet.
Spenser. Shepheard's Calendar

So him they led through all their streetes along,
Crowned with garlands of immortal *baies*,
And all the vulgar did about them throng,
To see the man, whose everlasting praise,
They all were bound to all posteritie to raise
Spenser.

I can but laugh at both,
That strive and storme with stirre outrageous,
For her, that each of you alike doth loth,
And loves another, with whom now she go'th,
In lovely wise, and sleepes, and sports, and playes;
Whilest both you here, with many a cursed oth,
Sweare she is yours, and stirre up bloodie frayes,
To win a willow bough, whilest other weares the bays.
Id.

See how the stubborn damsell doth deprave
My simple meaning with disdaynfull scorn;
And by the *bay* which I unto her gave;
Accompts myself her captive quite forlorne.
The *bay* quoth she, is of the victors born,

lded them by the vanquisht as theyr meeds,
d they, therewith, doe poetes heads adorne,
sing the glory of their famous deeds.
t sith she will the conquest challenge needs,
t her accept me as her faithful thrall,
at her great triumph, which my skill exceeds,
nay in trump of fame blaze over all.
en would I decke her head with glorious *bays*,
d fill the world with her victorious prayse. *Id.*

To take a boat in a pleasant evening, and with sick to row upon the waters, which Plutarch so ch applaudes, Ælian admires, upon the river neus, in those Thessalian fields beset with green es, where birds so sweetly sing, that passengers, chanted as it were with their heavenly musick, forforthwith all labours, care and grief; or in a ndilo, through the grand canale in Venice, to see se goodly palaces, must needs refresh and give ntent to a melancholy dull spirit.
Burton. Anat. Mel.

So up they rose, while all the shepherd-throng
th their loud pipes a country triumph blew,
d led their Thirsil home with joyful song:
an time the lovely nymph, with garlands new,
s locks in *bay* and honour'd palm-tree bound,
th lilies set, and hyacinths around;
d lord of all the year, and their may-sportings,
crown'd. *Fletcher's Purple Island.*

Like thunder 'gainst the *bay*,
hose lightning may enclose but never stay,
on his charmed branches. *Id. Faith. Shepherdess.*

That name I say in whom the muses meete,
d with such heate his noble spirits raise,
at kings admire his verse, whil'st at his feete,
pheus his harpe, and Phœbus casts his *bays*.
F. Beaumont.

Till critics blame, and judges praise,
The poet cannot claim his *bays*. *Swift.*

Say, Britain! could you ever boast
ree poets in an age at most?
r chilling climate hardly bears
sprig of *bays* in fifty years,
hile ev'ry fool his claim alleges,
if it grew in common hedges. *Id.*

Bid the warbling nine retire;
Venus string thy servant's lyre;
Love shall be my endless theme,
Pleasure shall triumph over Fame:
And when these maxims I decline,
Apollo! may thy fate be mine;
May I grasp at empty praise,
And lose the nymph to gain the *bays*. *Prior.*

The polish'd pillar diff'rent sculptures grace,
work outlasting monumental brass.
re smiling loves and bacchanals appear,
e Julian star, and great Augustus here.
e doves, that round the infant poet spread,
yrtle and *bays*, hang hov'ring o'er his head. *Pope.*

Yet suffer me, thou bard of wondrous meed,
mid thy *bays* to weave this rural weed. *Gay.*

Bay', *adj.*
Bay'ard,
Bay'ardly. } Lat. *badius*, old Fr. *baye*, *bai*, *rouge brun*, Ital. *baio*, Gr. *βαις*, or *βαιον*, the branch of the palm. oes it refer to the color of the bark? or the nacity with which the branch adheres to the unk; to intimate boldness, determination, or gged firmness? It is applied both to signify e color and spirit of a horse; and also to men ho are bold, blind, and self-willed. A *bay* orse is one whose color inclines to a chestnut; d this color is various, either a light *bay*, or a dark *bay*, according as it is less or more deep. All *bay* horses are commonly called brown by the common people. *Bayard* is another name for a horse of this complexion. It was likewise the appellation of a noted blind horse in the old romances; whence, perhaps, the proverbial expression 'as bold as blind Bayard.' Rinaldo's horse, in Ariosto, is called *Baiardo*. There is an allusion to the proverb just cited, in the old play entitled Match at Midnight, 'Do you hear, Sir Bartholomew *Bayard?* But leap before you look.' Perhaps, says Nares, the whole proverb might be 'as bold as blind *Beyard*, that leaps before he looks,' in allusion to another proverb, 'look before you leap.' *Bayard* occurs in R. Brunne, and *bay* in Chaucer.

Upon a stede *bay*, trapped in steele.
Ye ben as bold as is *Bayar* the blind,
That blondereth forth, and peril careth non,
He is as bold to run against a ston,
As for to go besides in the way. *Chaucer.*

But as *baiarde* the blind stede
Till he fall in the ditche a midde
He gothe there no man will hym bidde,
He stant so fer forthe out of rewle,
There is no witte that maie hym reule.
Gower. Conf. Ann.

I marvel not so much at blind *Bayards*, which neuer take God's book in hand.
Bernard Gilpin's Sermons.

Who is more bold than the *bayard* blind?
Mirror for Magistrates.

Bay, *v.* & *n.* From the Fr. *abboi*, which signifies the last extremity. Its primary sense is the barking of a dog at hand, and relates to the condition of a stag, when the hounds are almost upon him. It does not refer to the assailant, but to his selected victim, and in the moment of his utmost peril. It is figuratively employed to describe the state of any thing surrounded by enemies. It is sometimes applied to the simple barking of a dog at any object. In Spenser it is used in the sense of parley, before surrendering.

So well he woo'd her, and so well he wrought her,
With faire entreatie and sweet blandishment,
That at the last unto a *bay* he brought her,
So as she to his speeches was content
To lend an eare, and softly to relent. *Spenser*

Like dastard curres that, having at a *bay*
The salvage beast embost in wearie chace,
Dare not adventure on the stubborne pray,
Ne byte before, but move from place to place,
To get a snatch when turned is his face. *Id.*

Here wast thou *bay'd* brave hart,
Here didst thou fall, and here thy hunters stand,
Sign'd in thy spoil and crimson'd in thy Lethe;
O world, thou wast the forest to this hart,
And this, indeed, O world, the heart of thee
How like a deer, stricken by many princes,
Dost thou here lie. *Shakspeare.*

What, shall one of us,
That struck the foremost man of all this world,
But for supporting robbers; shall we now
Contaminate our fingers with base bribes?
And sell the mighty space of our large honours,
For so much trash as may be grasped thus?
I had rather be a dog, and *bay* the moon,
Than such a Roman. *Id*

We are at the stake,
And *bay'd* about with many enemies. *Id.*

I was with Hercules and Cadmus once,
When in the wood of Crete they *bay'd* the boar
With hounds of Sparta. *Id.*

If he should do so,
He leaves his back unarm'd, the French and Welsh
Baying him at the heels. *Id.*

This ship, for fifteen hours, sate like a stag among hounds at the *bay*, and was sieged and fought with, in turn, by fifteen great ships.
Bacon's War with Spain.

Fair liberty, pursued and meant a prey
To lawless power, here turn'd, and stood at *bay*.
Denham.

Nor flight was left, nor hopes to force his way;
Embolden'd by despair, he stood at *bay*;
Resolv'd on death he dissipates his fears,
And bounds aloft against the pointed spears.
Dryden.

The hounds at nearer distance hoarsely *bay'd*;
The hunter close pursued the visionary maid;
She rent the heav'n with loud laments, imploring aid.
Id. Fables.

Joyful he knew the lamp's domestic flame
That trembled thro' the window; cross the way
Darts forth the barking cur and stands at *bay*. *Gay.*

Sweet was the sound, when oft, at evening's close,
Up yonder hill the village murmur rose;
There as I pass'd with careless steps and slow,
The mingling notes came soften'd from below;
The swain responsive as the milkmaid sung,
The sober herd that low'd to meet their young;
The noisy geese that gabbled o'er the pool,
The playful children just let loose from school;
The watch-dog's voice that *bay'd* the whisp'ring wind,
And the loud laugh that spoke the vacant mind;
These all in sweet confusion sought the shade,
And fill'd each pause the nightingale had made.
Goldsmith's Deserted Village.

But the hound *bayeth* loudly,
The boar's in the wood,
And the falcon longs proudly
To spring from her hood. *Byron.*

Bay. To bathe.

He feedes upon the cooling shade, and *bayes*
His sweatie forehead in the breathing wind.
Spenser. Faerie Queene.

BAY, from the old Saxon *bugan*, *bygan*, to bow or bend; it is applied to the curvings of a shore; to recesses in barns, buildings, or windows, so say Skinner and Minshew; Nares thus defines it: a principal division in a building; probably, as Dr. Johnson conjectured, a great square, in the framework of the roof, whence, barn of three bays, is a barn twice crossed by beams; in large buildings having the Gothic framework to support the roof, like Westminster Hall, the *bays* are the spaces between the supporters; houses were estimated by the number of bays; as a term among builders, it also signified every space left in the wall, whether for door, window, or chimney. See *Chambers's Dictionary and Kersy.*

Coles, in his Latin Dictionary, makes a *bay* a space of a definite size; 'a *bay* of building, mensura vigintiquatuor pedum,' i. e. the measure of twenty-four feet.

Bay-Window, from *bay*, *supra*; not according to Minshew, from its resemblance to a *bay* on a coast, or round, for it was usually square; bow-window has now effectually supplanted it, in practice, and implies a semi-circular sweep, like a bow. Mr. Tyrwhitt, in his Glossary to Chaucer, thus explains it:—'a large window, probably so called because it occupied a whole *bay*, i. e. the space between two cross-beams.' We have the authority of an old dictionary for asserting that a *bay-window* meant also a balcony.

And there, beside, within a *bay-window*,
Stood one in green, ful large of head and length,
And beard as black as feathers of the crow.

There stands in sight an isle, hight Tenedon,
Rich, and of fame, while Priam's kingdom stood;
Now but a *bay*, and rode unshure for ship. *Surrey.*

Like as a ship that through the ocean wyde
Directs her course unto one certaine coast
Is met of many a counter-winde and tyde,
With which her winged speed is let and crost,
And she herself in stormie surges tost;
Yet making many a borde and many a *bay*,
Still winneth way, nor hath her compasse lost;
Right so it fares with me in this long way,
Whose course is often stay'd, yet never is astray.
Spenser.

I'd have some pleasant lodging i' the high street, sir;
Or if 'twere near the court, sir, that were much better;
'Tis a sweet recreation for a gentlewoman
To stand in a *bay-window* and see gallants. *Middleton.*

We have also some works in the midst of the sea, and some *bays* upon the shore for some works, wherein is required the air and vapour of the sea. *Bacon.*

A reverend Syracusan merchan.,
Who put unluckily into this *bay*. *Shakspeare.*

If this law hold in Vienna ten years, I'll rent the fairest house in it after threepence a *bay*. *Id.*

Why it hath *bay-windows* transparent as barricadoes, and the clear stones towards the south-north are as lustrous as ebony. *Id.*

Such murmur fill'd
The assembly, as when hollow rocks retain
The sound of blust'ring winds, which all night long
Had rous'd the sea, now with hoarse cadence lull
Seafaring men o'er-watch'd, whose bark by chance
Or pinnace anchors in a craggy *bay*
After the tempest. *Milton*

The *bay* of St. Nicholas, where they first put in, lieth in sixty-four degrees, called so from the abbey there, built of wood, wherein are twenty monks, unlearned, as then they found them, and great drunkards: their church is fair, full of images and tapers. There are besides but six houses, whereof one built by the English. In the *bay*, over against the abbey, is Rose Island, full of damask and red roses, violets, and wild roses. *Milton's History of Muscovia.*

Hail, sacred solitude! from this calm *bay*,
I view the world's tempestuous sea.
Roscommon.

Here in a royal bed the waters sleep,
When tir'd at sea, within this *bay* they creep.
Dryden.

Some of you have *bay*. *Id.*

Blake having heard that a Spanish fleet of sixteen ships, much richer than the former, had taken shelter in the Canaries, immediately made sail towards them. He found them in the *bay* of Santa Cruz, disposed in a formidable posture. The *bay* was secured with a strong castle, well provided with cannon, besides seven forts in several parts of it, all united by a line of communication, manned with musqueteers.
Hume's History of England.

BAYARD.

BEAUMARCHAIS.

T. BANKS R. A.

BARNEVELT.

RICH. BAXTER.

JOHN BASTWICK.

BARONIUS.

BEAUMONT [illegible]

CARDINAL [illegible]

London, Published by [illegible]

They gain by twilight's hour their lonely isle,
To them the very rocks appear to smile,
The haven hums with many a cheering sound,
The beacons blaze their wonted stations round,
The boats are darting o'er the curly *bay*,
And sportive dolphins bend them through the spray.
Even the hoarse sea-bird's shrill discordant shriek,
Greets like the welcome of his tuneless beak!
Beneath each lamp that through its lattice gleams,
Their fancy paints the friends that trim the beams.

Byron.

Bay, in botany. See Laurus.

Bay, in hunting, is when the dogs have earthed a vermin, or brought a deer, boar, or the like, to turn head against them. In this case, not only the deer, but the dogs are said to bay. It is dangerous going in to a hart at bay, especially at rutting time; for then they are fiercest.

Bay of Islands, a bay on the east coast of New Zealand, so called from the number of islands off the shore. Here is good anchorage; high water takes place about eight o'clock at the full and change of the moon, when the perpendicular rise of the tide is from six to eight feet. Abundance of fish frequent the bay, which the natives take with enormous nets made of a kind of grass, five fathoms deep, and 300 or 400 fathoms long. Round their villages nets lie in heaps, like hay-cocks covered with thatch, to resist the weather. All kinds of refreshment may be had here. Long. 135° 38′ W., lat. 35° 18′ S.

Bay of Isles, a bay on the east coast of the island of Georgia, so called from a great number of small islands in and before it. Long. 37° 30 W., lat. 54° 3′ S.

Bay Color, a sort of red inclining to chestnut, is formed from the Latin baius, and that from the Greek *βαιος*, a palm branch; so that badius or bay properly denotes color phœniceus. Hence, among the ancients, the horses now called bays, were denominated equi palmati.

Bay, Plum. See Guaiava.

Bay, Rose. See Oleander.

Bay Salt, a variety of common salt, (muriate of soda), obtained from sea-water, and which is thought to possess peculiar advantages for curing provisions. In the bay of Biscay, on the shores of the Mediterranean, and in the Bahama islands, the process for procuring it is thus simply carried on:—An artificial pond is formed, of ten inches or a foot deep, and carefully lined with clay, at some convenient distance from the sea, so that one end may have a ready communication by means of a sluice, for the purpose of filling when necessary, while at the opposite end the brine pit communicates with smaller and shallower receptacles. In the large reservoir the sea-water is concentrated by evaporation, from the action of the sun and air; and in the smaller ones the process is completed by removing the crust of salt as fast as it may be formed. Thus the salt obtained is deposited in large flattened octohedral crystals which do not deliquesce, in consequence of being free from the muriate of magnesia, with which the common salt is contaminated. The process may be considered as one of the most ancient applications of chemical principles, for in hot climates, and especially in Egypt, it was taught by nature herself. See Pliny lib. xxxi. cap. 7. France is thus furnished with a very profitable article for exportation into other countries. The salt made is of different colors, according to the color of the clay employed in making the pits. That of the French is brown, whence it is said comes the denomination of bay salt, and it is usually sold without further preparation; though in some places they make it white by refining it in large flat cauldrons. The great difficulty which attends the making it in Great Britain arises from the heat of our summer not being sufficiently strong to evaporate a great quantity of sea-water in a small portion of time.

BAYA, in ornithology, Indian grosbeak, or Loxica Indica, rather larger than a sparrow, with yellow brown plumage, yellowish head and feet, a light-colored breast, and a conic beak, very thick in proportion to his body. This bird is very common in Hindostan; and described as surprisingly sensible, faithful, and docile. In a state of nature, it builds on the highest tree which it can find; generally on the palmyra or Indian fig-tree, preferring that which overhangs a well or rivulet. There it suspends its bottle-shaped nest, so as for it to rock with the wind, and places it with its entrance downwards, to secure it from birds of prey. It is taught with ease to fetch a piece of paper, or any small thing which his master wants. Almost incredible tales are told of its docility; and it is confidently asserted, that if a house or any other place be shown to him once or twice, he will carry a note thither immediately, on observing a proper signal. They are also trained by the youths of Benares to pluck off the pieces of gold called ticas, placed by way of ornament between the eye-brows of their mistresses, which they bring in triumph to the lover. The flavor of the eggs is said to be exquisite.

BAYAMO, a town on the east part of Cuba, on the river Estreo, which forms a bay on the coast, twenty miles below the town. It gives name to a channel between the small islands and rocks called Jardin de la Reyna, on the north-west, and the shoals and rocks which line the coast on the south-east, situated eighty miles W. S. W. of St. Jago Long. 76° 50′ W., lat. 20° 45′ N.

BAYANO, a considerable river of South America, in the kingdom of Terra Firma, and province of Panama, which rises in the province of Darien, and falls into the sea twenty-four miles from the bay of Panama. Its mouth is in long. 78° 55′ W., lat 9° 3′ N.

BAYARD (Peter du Terrail de), esteemed by his contemporaries the model of soldiers and men of honor, and denominated 'the knight without fear and without reproach,' was descended from an ancient and noble family in Dauphiné. He was with Charles VIII. at the conquest of the kingdom of Naples; where he gave remarkable proofs of his valor, especially at the battle of Fornova. He was dangerously wounded at the taking of Brescia; and there restored to the daughters of his host 2000 pistoles, which their mother had directed them to give him in order to prevent the house from being plundered. At his return to France he was made lieutenant-general of Dauphiné. He fought by the side of Francis

I at the battle of Marignan; and that prince afterwards insisted on being knighted by his hand, after the manner of the ancient knights. The chevalier Bayard defended Mezieres during six weeks against Charles V.'s army. In 1524, at the retreat of Rebec (the general Bonnivet having been wounded and obliged to quit the field), the conduct of the rear was committed to Bayard, who, though so much a stranger to the arts of a court that he never rose to the chief command, was always called, in time of real danger, to the posts of greatest difficulty and importance. He put himself at the head of the men at arms: and animating them by his presence and example to sustain the whole shock of the enemy, he gained time for his countrymen to make good their retreat. But in this service he received a wound which he immediately perceived to be mortal; and being unable to continue on horseback, ordered an attendant to place him under a tree, with his face towards the enemy; then fixing his eyes on his sword, which he held up instead of a cross, he addressed his prayers to God; and in this posture calmly waited the approach of death. Bourbon, who led the foremost of the enemy's troops, found him in this situation, and expressing his regret and pity at the sight, 'Pity not me,' cried the high spirited chevalier, 'I die as a man of honor ought, in the discharge of my duty; they indeed are objects of pity, who fight against their king, their country, and their oath.' The marquis of Pescara, passing soon after, manifested his admiration of Bayard's virtue, as well as his sorrow for his fate, with the generosity of a gallant enemy; and finding that he could not be removed with safety from that spot, ordered a tent to be pitched, and appointed proper persons to attend him. He died, notwithstanding their care, as his ancestors for several generations had done, in the field of battle. Pescara ordered his body to be embalmed, and sent to his relations; and such was the respect paid to military merit in that age, that the duke of Savoy commanded it to be received with royal honors in all the cities of his dominions.

BAYAS, a town at the foot of Mount Amanus, on the gulf of Issus (now of Scanderùn), the key to the celebrated defile (the Pylæ Amanicæ of the ancients), between it and Alexandretta (Scanderùn). The neighboring country is fertile, and the mountains, in summer time, a delightful retreat. It is exactly opposite the Ayàs, the ancient Ægæ, where the survey of the southern coast of Asia Minor, by captain Beaufort, in 1812, was unfortunately terminated. The Aghàs, in this and the neighbouring places, have long bid defiance to the authority of the Porte. See *Beaufort's Karamania*.

BAYAZID, or BAJAZID, a city of Turkish Armenia, in the pachalic of Erzerum, on the declivity of a mountain, the summit of which, as well as the whole of this place, is strongly fortified. It contains two churches, three mosques, and an ancient monastery called Karu Rilleesea, celebrated for its beautiful architecture. The inhabitants, who amount to about 30,000, are esteemed the most handsome and warlike people in Armenia. The majority are Turks. Distant fifty miles S. S. W. of Erivan, and 140 east of Erzerum.

BAYEN (Peter), a celebrated French chemist, was born in 1725, at Chalons sur Marne. Having received a classical education, he studied pharmacy; and, during the seven years' war, was chief apothecary to the French army in Germany. He was afterwards employed in analysing the mineral waters of France, on completing which, he settled at Paris, where he pursued his chemical experiments with great reputation, till his death in 1801. He pursued a tedious but certain mode of analysing minerals, by exposing them, without being reduced to powder, to the action of sulphuric acid at the temperature of the atmosphere; after this action had continued for a length of time, he got by lixiviation the sulphates formed by the combination of the acid with the different component elements of the stone. He did not make use of the trituration of the stone to an impalpable powder, nor its fusion with caustic potash, which facilitate the action of acids, and which are used with so much advantage at present. The account he has published of his analysis will, nevertheless, be instructive to the chemical student. His chemical tracts have been collected in 2 vols. 8vo.

BAYER (John), a German lawyer and astronomer of the latter part of the sixteenth and beginning of the seventeenth century, but in what particular year or place he was born, is not certainly known: however, his name will be ever memorable in the annals of astronomy, on account of his excellent work, published in 1603, under the title of Uranometria, being a complete celestial atlas, or large folio charts of all the constellations, with a nomenclature collected from all the tables of astronomy, ancient and modern. By means of the Greek letters, which he used as marks of their relative magnitudes, the stars of the heavens may, with as great facility, be distinguished and referred to, as the several places of the earth are by means of geographical tables; and our celestial globes and atlasses have ever since retained this method. Astronomers, in speaking of any star in the constellation, denote it by saying it is marked by Bayer, α, or β, or γ, &c. He greatly improved and augmented this work by subsequent study. At length, in 1627, it was re-published under a new title, viz. Cœlum Stellatum Christianum, i.e. the Christian Stellated Heaven; or the Starry Heavens Christianised; in this edition the Heathen names and characters, or figures of the constellations, were rejected, and others taken from the scriptures, were inserted in their stead, an innovation, however, too great for general reception. In later editions of his work (in those of 1654 and 1661), the ancient figures and names were restored.

BAYER (Theophilus Sigfred), a learned philologer and antiquarian, born at Konigsberg in 1694, applied himself successfully to the study of the eastern languages, particularly the Chinese, of which he acquired a great knowledge. When about twenty-three years of age, he was appointed librarian at Konigsberg. In 17[illegible] he accepted of an invitation to Petersburgh, and was there made professor of Greek and Roman antiquities. In 1730, he published a very curious and learned work, entitled Museum Sinicum, in 2 vols. 8vo. He died at Petersburgh in 17[illegible]

BAYEUX, a considerable town of France (the Beducassum and Bajoce, of ancient geography), in the department of Calvados, and late province of Normandy. It was formerly the capital of Bessin, and is still a bishop's see, whose jurisdiction extends over all the department. The cathedral church is accounted one of the finest in France, and contains a celebrated piece of tapestry, representing the conquest of England by William I., supposed to have been the work of his queen Matilda. It consists of a web of linen, 442 feet in length, and about two feet in breadth. It is situated on the river Aure, four miles from the English Channel; and carries on a good trade in corn, cattle, hemp, and butter, as well as in its own manufactures of lace, camblets, stockings, and leather. Inhabitants about 10,000.

Bayeux (George), an advocate at Caen, who obtained the prize from the academy at Rouen for a poem on Filial Piety. He translated the Fasti of Ovid, on which he added valuable notes, printed in 4 vols. 8vo. He wrote also Reflections on the Reign of Trajan, 4to. He was, however, unfortunate, and having been imprisoned at Orleans, fell in the massacre which took place there in 1792.

BAYLA, or Bela, a town of Persia, capital of the district of Lus, in the province of Mekran. It is situated on the north-east banks of the river Pooralie, and about a third of it is surrounded by a good mud wall. It consists of above 2000 mud and wood houses, of which 250 or 300 are inhabited by Hindoos, who are well treated here. Bayla is, on the whole, a neat town, the residence of the jam, or chief of Lus, who seems dependent on the khan of Kelat. His durbar, or hall of audience, is a very ordinary apartment. The cemetery of the jam and his family contains several curious tombs, ornamented with black and white pebbles, arranged in short quotations from the koran, and encircled with wreaths of the same substance, which produce a pleasing effect. Distant 293 miles north of Kelat.

BAYLE (Peter), author of the Historical and Critical Dictionary, was born November 18, 1657, at Carlat, in France, where his father John Bayle was a protestant minister. In 1666 he went to the protestant university at Puylaurens, and in 1669 removed to that of Toulouse, whither protestants at that time frequently sent their children to avail themselves of the learning of the Jesuits; but here, to the great grief of his father, he embraced the Romish religion; being, however, soon sensible of his error, he left that university, and went to study at Geneva. After this he was chosen professor of philosophy at Sedan; but that protestant university being suppressed by Louis XIV. in 1687, he was obliged to leave the city, and was soon after chosen professor of philosophy and history at Rotterdam, with a salary of about £45 a year. In 1682 appeared his Letter concerning Comets. And Father Maimbourg having published his History of Calvinism, wherein he endeavours to draw upon the protestants the contempt and resentment of the catholics, Mr. Bayle wrote a piece to confute it. The reputation which he had now acquired, induced the States of Friezland, in 1684, to offer him a professorship in their university; but he wrote them a letter of thanks, and declined the offer. This same year he began to publish his Nouvelles de la republique des Lettres. In 1686 he was drawn into a dispute with the famous Christina queen of Sweden. His Journal for April had noticed a printed letter, supposed to have been written by her Swedish majesty to Chevalier de Terlon, wherein she condemns the persecution of the protestants in France; and had observed, that her tolerant spirit was 'a remainder of protestantism.' This produced a letter to the philosopher, from that singular woman, in which she says, 'You express so much respect and affection for me, that I pardon you sincerely; and I would have you know, that nothing gave me offence but that remainder of protestantism, of which you accused me. I am very delicate upon that head, because nobody can suspect me of it, without lessening my glory, and injuring me in the most sensible manner. My fortune, my blood, and even my life, are entirely devoted to the service of the church; but I flatter nobody, and will never speak any thing but the truth.' Mr. Bayle replied in a subsequent number of his work, to that princess's entire satisfaction. The persecution which the protestants at this time suffered in France affected Mr. Bayle extremely. He made occasionally some reflections on their sufferings in his journal; and some time afterwards he published his Commentaire Philosophique upon these words, 'Compel them to come in;' and in the year 1690 appeared his famous Avis aux Refugiez, &c. which so excited the anger of M. Jurieu, that he charged the author with being a traitor against the state. Bayle retorted with the utmost severity, and Jurieu replied with equal bitterness; till at last the magistracy of Amsterdam enjoined the controversialists not to publish any thing against each other before it had been examined by Mr. Boyer, the pensionary of Rotterdam. In Nov. 1690, Bayle advertised a Scheme for a Critical Dictionary. The public not approving his first plan, he threw it into a different form; and the first volume was published in August, 1695, the second in October following. The work at last was extremely well received by the public; but it engaged him in fresh disputes, particularly with M. Jurieu and the Abbé Renaudot. Jurieu endeavoured to engage the ecclesiastical assemblies to condemn the dictionary; and presented it to the senate sitting at Delft, but they took no notice of the affair. The consistory of Rotterdam granted Mr. Bayle a hearing; and after having heard his answers to their remarks, declared themselves satisfied. Jurieu made another attempt with the consistory in 1698; and so far prevailed with them, that they exhorted Mr. Bayle to be more cautious with regard to his principles in the second enlarged edition of his dictionary, which was published in 1702. Bayle was a most indefatigable writer. In one of his letters to Maizeaux, he says, that since his twentieth year, he hardly remembers to have had any leisure. His intense application contributed to impair his constitution, and to increase a pulmonary disorder which had cut off several of his family. Judging it to be mortal he would take no remedies. He died the twenty-eighth of December, 1706, after he had been writing the greatest part of the day. Voltaire says of the Critical Dictionary 'it is the first work of the kind in which a man may learn to think;' and remarks, that 'the decree of the parliament of Toulouse, when it declared his will valid in France, notwithstanding the rigor of the laws,' added, 'that such a man could not be considered as a foreigner.' Bayle, however, has been more correctly characterised as a sophist rather than a philosopher. With great powers of distinguishing truth from falsehood, he pushed enquiry into universal doubt, and remained in doubt because he thought indifferentism to truth a virtue, and therefore cultivated it. In private life he is said to have been an unassuming and temperate man; but his writings abound with the bigotry of scepticism, and contain not a few uncharitable insinuations against that religious zeal which he never felt: moreover, he is notoriously indelicate, and seems as if laboring to atone for distracting by debauching the tyro's mind. Lord Lyttleton finely expostulates with him under the assumed character of Mr. Locke, in his Dialogues of the Dead, vol. ii. Dialogue 24. p. 315. 'You have endeavoured,' says this excellent writer, 'and with some degree of success, to shake those foundations, on which the whole moral world, and the great fabric of social happiness, entirely rest; how could you, as a philosopher, in the sober hours of reflection, answer for this to your conscience, even supposing you had doubts of the truth of a system, which gives to virtue its sweetest hope, to impenitent vice its greatest fears, and to true penitence its best consolations; which restrains even the least approaches to guilt, and yet makes those allowances for the infirmities of our nature, which the stoic pride denied to it, but which its real imperfection, and the goodness of its infinitely benevolent Creator, so evidently require?'

BAYLY (Lewis), author of the Practice of Piety. He was born at Caermarthen in Wales, educated at Oxford, made minister of Evesham in Worcestershire, about 1611, became chaplain to king James, and was promoted to the see of Bangor in 1616. His celebrated book was dedicated to Charles, prince of Wales; in 1734 it had reached the fifty-ninth edition. He died in 1632.

BAYNES (John), an English lawyer, born at Middleham, in Yorkshire, in 1758. He received the first part of his education at Richmond school, and afterwards went to Trinity College, Cambridge, from whence he removed to Gray's Inn. He became a member of the Constitutional Society, and wrote a number of anonymous pieces, chiefly political, in prose and verse. There has also been attributed to him an Archæological Letter on the subject of the poems printed by Chatterton under the name of Rowley, addressed to dean Milles. He proposed the republication of lord Coke's tracts, a design prevented by his death in 1787.

Baynes (Sir Thomas), an English physician, born about 1622, was educated at Christ's College, Cambridge, where he applied to the study of physic. He afterwards became professor of music at Gresham College; and travelled with Sir John Finch to Italy and Constantinople. He died at Constantinople in 1681, much lamented by his companion, who survived him but a short time. They left between them £4000 to Christ's College.

BAY'ONET, *v.* & *n.* Fr. *bayonette.* A short sword or dagger fixed at the end of a musket, by which the foot hold off the horse, so called because the first bayonets were made at Bayonne, in France.

> One of the black spots is long and slender, and resembles a dagger or *bayonet.* *Woodward.*
>
> You send troops to sabre and *bayonet* us into submission. *Burke.*
>
> Not a single head
> Was spared—three thousand Moslems perish'd here,
> And sixteen *bayonets* pierced the seraskier. *Byron.*
>
> You should but give few cartridges to such
> Troops as are meant to march with greatest glory on.
> When matters must be carried by the touch
> Of the bright *bayonet*, and they all should hurry on,
> They sometimes, with a hankering for existence,
> Keep merely firing at a foolish distance. *Id.*
>
> The town was entered: first one column made
> Its sanguinary way good—then another.
> The reeking *bayonet* and the flashing blade
> Clashed 'gainst the scimitar.

Bayonets were formerly made with a round handle fitted to the bore of a firelock, and to be fixed there after the soldier had fired; but they are now made with iron handles and rings, that go over the muzzle, and are screwed fast, so that the soldier fires with his bayonet on the muzzle of his piece, and is ready at once to act. This use of the bayonet fastened on the muzzle was a great improvement, first introduced by the French; to which, according to M. Folard, they owed a great part of their victories for some time afterwards; and to the neglect of this, in succeeding wars, and trusting to their fire, the same author attributes most of the losses they sustained. Of late the bayonet has come into very general use; and some battles have been won by it without firing a shot. It was much encouraged by Frederick the Great, who caused an inch and a half to be added to the length of the Prussian bayonet.

A French writer, in a work entitled L'Essai général de la Tactique, has proposed a method of exercising soldiers in a species of fencing or tilting with this weapon. But, as another very sensible author, Mauvillon, in his Essai sur l'Influence de la Poudre à Canon dans l'Art de la Guerre Moderne, justly asks, how can any man tilt or fence with so cumbrous an instrument and so difficult to be handled, as the firelock! It seems probable that great advantage may be obtained by a person who has been taught to use such a weapon scientifically, when contending with an individual; but the niceties of parrying are not applicable to the charge in line; a firm grasp and a quick and steady thrust are what is required.

BAYONNA, a well-built town of the province of Galicia, in Spain, situated on a small bay of the Atlantic. It contains a collegiate church, a Franciscan convent, and a hospital, and is defended by a castle, with a governor and a small garrison. The inhabitants obtain their livelihood by fishing. The Bay of Bayonna forms part of the Gulf of Vigo, nine miles south-west of Vigo, and twelve north-west of Tuy.

Bayonna Isles, or **Islas de Seyas de Bayona et D'Estelas**, two small islands, with a number of insular rocks, situated in the Atlantic, at the entrance of the Bay of Bayonna, off the coast of Galicia, in Spain. They were called by the ancients Insulæ Deorum, or the Isles of the Gods, and lie six miles N. N. W. of Bayonna.

BAYONNE, a rich, populous, and flourishing commercial town of France, in the department of the Lower Pyrenees. It is seated near the mouth of the Adour, which forms a good harbour, and is divided into three parts: the great town on this side the Nive; the little town between the Nive and the Adour; and the suburbs of St. Esprit, chiefly inhabited by Jews, beyond this last river. A citadel, constructed by Vauban, on the top of an eminence in the suburb, commands both the harbour and the town, which are further defended by small redoubts. A wooden drawbridge, which allows vessels to pass, and where a small toll is levied, connects the suburbs with the town. The ancient cathedral is remarkable for the height of the nave, and the delicacy of the pillars which support it. The quay is an elegant and frequented promenade; but the most beautiful part of the city is the Place de Grammont. The bishop was formerly suffragan of the archbishop of Auch; he is now under the archbishop of Toulouse, and exercises jurisdiction over three departments, those of the Upper and Lower Pyrenees and of the Landes. Bayonne, before the revolution, was the seat of a provincial tax-office, and court of justice. At present it is the largest though not the chief town of the Lower Pyrenees, and the head of the most western arrondissement, which consists of seven cantons, and contains 70,000 inhabitants. An extensive commerce is carried on here with Spain, in which French and foreign goods are given in exchange for wood, iron, fruit, and the precious metals. The principal of the maritime trade is the cod and whale fishery; in these branches from thirty to forty ships of 250 tons average, were lately employed. Masts and other wood for ship-building, brought from the Pyrenees, are exported to Brest and other ports of France. Hams, wines, and chocolate, are exported in great quantities to various parts. The military weapon called the bayonet was invented here in the seventeenth century. The language of the people is the ancient Biscayan or Basque. Forty-four miles W. N. W. of Pau, and 518 S. S. W. of Paris. Long. 1° 24′ W., lat. 43° 29′ N. Inhabitants about 13,000.

Bayonne Bay, or **La Mer des Basques**, a part of the Bay of Biscay washing the shores of the district of Labour in the south of France.

BAYREUTH, or **Bareith**, a principality of Germany, formerly included in the Circle of Franconia; now forming a part of the kingdom of Bavaria. It is bounded by the Upper Palatinate and Bohemia on the east, and by the territories of Nuremberg and Anspach south. Its extent is estimated at 1760 square miles, and its population at 200,000 souls. Oberland is a hilly region · the climate is cold, and much of the soil barren, but it still affords good pasturage, and black cattle of a superior breed and sheep are reared here. The lower division, Unterland, is flat, and in some parts sandy; but affords much fertile soil, and good crops of grain and tobacco. The last is sent in great quantities to Hamburgh and Bremen. Bayreuth is not destitute of minerals; iron and marble are found in Oberland; flax also constitutes a considerable production here, in spinning and working which into linen as well as into lace, a large portion of the population is employed. At the peace of Tilsit, Buonaparte appropriated this principality and annexed it to the kingdom of Bavaria in 1810. The upper division is included in the Circle of the Maine, the lower in that of the Rezat.

Bayreuth, or **Bareith**, the capital, is situated near the Maine, and is a handsome town with broad and regular streets, entered by six gates. Among the public buildings which deserve notice, are the old and new castles, the convents and churches, the barracks, the mint, and the gymnasium. Its chief manufactures are cloth, earthenware, and tobacco-pipes. It is about fifty miles north of Augsburg, in N. lat. 49° 54′, and E. long. 11° 17′

BAYS, in antiquity. See Bay.

BAYZE, **Bays**, or **Baize**, was first introduced into England, with says, serges, &c. by the Flemings; who, being persecuted by the duke of Alva for their religion, fled hither about the fifth of queen Elizabeth's reign; and had afterwards peculiar privileges granted them by act of parliament 12 Charles II. 1660. The exportation of bayze was formerly much more considerable than now, the French having learnt to imitate it. The English bayze, however, is still in request in Spain and Portugal, and even in Italy.

BAY'ZE. See Baize.

BAZA, or **Baça**, a town of Spain. See Baça.

Baza, Hoya de, See Baça.

BAZ'AAR, *n. s.* Persian *buzzar*, the market, now written *bazaar*, in the commercial language of the East Indies. A constant market; a kind of covered market.

> This noble city (Cashan) is in compass not less than York or Norwich, about four thousand families being accounted in her. The houses are fairly built. The *buzzar* is spacious and uniform, furnished with silks, damasks, and carpets of silk.
>
> *Sir T. Herbert's Travels*, (edit. 1677 p.) 223.

Bazar, **Bazaar**, or **Basar**, a denomination originally given by the Turks and Persians to a kind of exchange, or places where their finest stuffs and miscellaneous wares are sold. These are also called bezesteins. The word is of Arabic origin, where it denotes sale, or exchange of goods. Some of the eastern bazars are open, like the market-places in Europe, and serve for the same uses, particularly for the sale of the bulky commmodities. Others are covered with lofty ceilings, or domes, pierced to give light; and in these the jewellers and other dealers in rich wares, have their shops. The bazar of Ispahan is one of the finest places in Persia; yet, notwithstanding its magnificence, it is excelled by the bazar of Tauris, which is the largest that is known, having several times held

30,000 men ranged in order of battle. At Constantinople there are an old and new bazar, which are large square buildings, covered with domes, and sustained by arches and pilasters; the former chiefly for arms, harness, and the like; the latter for goldsmiths, jewellers, furriers, and all sorts of manufactures. See ALEPPO.

BAZAS, a town of France, in the department of the Gironde, and late province of Guienne. It is built on a rock, and lies thirty miles south-east of Bourdeaux. Inhabitants about 5000. It was formerly the bishop's see of a very extensive diocese.

BAZAT, or BAZA, in commerce, a long fine-spun cotton, which comes from Jerusalem, whence it is also called Jerusalem cotton.

BAZEEGURS, a tribe of Indians, inhabiting different parts of Hindoostan, and recognised by several appellations, as Bazeegurs, Panchperees, Kunjura, or Nuts; they follow a mode of life distinguishing them from the Hindoos, and abstain from intermixing their families with them. The name Bazeegur is said to signify a juggler, and some etymologists find a derivation of conjuror from kunjura. They are found partly in wandering tribes, and partly adhering to fixed residences.

The Bazeegurs are divided into seven castes, Charee, Athbhyeea, Bynsa, Purbuttee, Kalkoor, Dorkinee, and Gurgwar; but all the castes intermarry. Their own historical traditions trace their descent from four brothers, who, finding it difficult to provide for their followers, resolved to separate, and direct their course respectively to each quarter of the world; in consequence of which, one of them, named Sa, arrived in Bengal, from Gazeepour or Allahabad. His first abode was at Hoogly, and having governed his tribe peaceably during many years, he died at Uncourpoor. Sa left three sons who succeeded each other, and the succession regularly passed through several generations, and to Munbhungee, about fifteen or twenty years ago. At that time, some of the castes considered a woman called Toota as their chief; but the power ascribed to her seems merely nominal. Munbhungee, however, would not suffer any of Toota's people to remain in the territory occupied by his sect; and the latter were equally jealous of the former.

The features of the Bazeegurs do not decidedly differ from those of other tribes around them. Some of their women are reputed beautiful, and are by no means scrupulous in forming temporary alliances. They are Mahommedans in food and apparel; some traversing the country as Mahommedan Fakeers: a particular association among them has been accused of sacrificing human victims. Those called Panchperees seem to venerate a female deity, Kali, probably the sanguinary goddess of the Hindoos. The Bazeegurs, properly so called, are circumcised, and have priests to officiate at their marriages and funerals, but their knowledge of the system of Mahomet is very imperfect. They seem to acknowledge an omnipotent being, and believe that all nature is animated by one universal spirit, to which the soul, as a portion of it, will after death be united.

The marriage ceremony among them begins by the bridegroom repairing to the hut of his elect, and calling aloud for her to be delivered to him. A near relation, guarding the door, resists his entrance, and pushes him away, while he is the object of taunts and jocularity; at last the bride is brought forward. Both now receive the exhortation of a priest to practise mutual kindness, and the bridegroom, marking the bride's face with ochre, declares her his wedded wife, and she, on her part, does the same in return. The little fingers of their hands are now joined, and a scene of merriment commences from which the bride alone is spared. This consists chiefly in the progress to intoxication, for these people are addicted to the most immoderate use of spirits; and after copious libations, a cavalcade is formed of the whole party, which moves on to the hut of the bridegroom. Several enigmatical ceremonies are performed before the door; the mother of the bridegroom advances with a sieve containing rice, paint, and grass, with which the foreheads of the couple are touched, after being waved around them; and the bride is led into the house, before which there stands a small fresh branch of the mangoe tree in an earthen pot of water. In the evening the bride is conducted to her own hut, when the sober friends of the parties retire; but the majority, and generally with the bridegroom among them, pass the night in a state of insensibility on some neighbouring plain.

The chief occupation of both the male and female Bazeegurs consists in feats of address and agility to amuse the public. The former are very athletic, and the women are taught a species of lascivious dancing. The men are also jugglers, tumblers, &c. The people of each set, or dramatis personæ, go out under a sirdar, or manager of a company, for a definite period, generally a year; but no person can establish a set of actors without permission from the Nardar Boutah, or chief of the Bazeegurs, who receives a proportion of the profits. Each of five sets at Calcutta has a subordinate sirdar or ruler. These sirdars and the chief, apparently constitute a court for the trial of infringements of these regulations; and if, on application of the tongue to a piece of red-hot iron, a suspected person be burnt, he is declared guilty of a fraud, which is expiated by a fine, or by the additional punishment of having his nose rubbed on the ground. The fine being paid, it affords a new opportunity for gratifying the strong propensity implanted in these people for ardent liquors. Sometimes differences are the subject of reference to a larger assembly; where, before commencing the business, both plaintiff and defendant must provide a quantity of spirits proportioned to the importance of the case; the party non-suited bears the whole expense, and the assembly is regaled with the beverage produced.

Some of the females practise physic, and cupping, and perform a kind of tattooing on the skin of the Hindoos of their own sex. The men, besides their usual occupations, collect medicinal herbs, and a certain bud, the latter is dried, and the former prepared by their wives as curatives, especially of female complaints: thus they find employment in the towns, in such vocations, or by the sale of trinkets, though both afford but a

ious subsistence. Some tribes also exhibit
easts to the vulgar, or offer mats fabricated
nselves for sale.
riking coincidence has been remarked in
ode of life, the vocations, manners, and
ge of the different sects of these people
ose of the gipsies scattered over Europe
sia. Both the Bazeegurs and gipsies have
f or king; each has a peculiar language,
g some reciprocal analogy, and different
hat of the people among whom they reside.
dia, and in Europe, they are equally an
nt race; their pursuits, in so far as modi-
the manners of countries distant from each
are alike; for the discrepancies they exhi-
ay reasonably be ascribed to an insensible
ition of the habits of those near whom the
s tribes of mankind dwell. They are
y indifferent as to the quality of the food
g for their subsistence; and equally igno-
f systematic religious principles. All pre-
the strictest adherence to their own sect,
edulously abstain from intermixtures or
arriages with those of every nation: and
infringements of these rules are seen,
re to be ascribed more to necessity than
ation. Another resemblance, which has
bly been lost in the lapse of time, is sup-
to consist in the three-stringed viol, intro-
into Europe by the jugglers of the 13th
y, which is exactly similar to the instru-
now used in Hindostan. On uniting and
ning the whole features of resemblance, it
ot seem unlikely, that if Asia is their ori-
country, or if they have found their way
Egypt to India, they may also have emi-
farther at a period of remote antiquity,
ached the boundaries of Europe.

ZGENDGES, in natural history, a sub-
used by the Turks and other eastern na-
in dyeing scarlet. They mix it for this
se with cochineal and tartar, in the propor-
of two ounces of bazgendges to one of
eal. It seems to be no other than the
of the turpentine tree. They are found
n China. Many things of this kind were
ver to Mr. Geoffroy at Paris from China,
substances used in the scarlet dyeing of
ountry, and they all proved to be the same
he Syrian and Turkish bazgendges, and with
ommon turpentine horns. The lentisk, or
c tree, also produces horns of a similar
all being occasioned by the pucerons,
make their way into the leaves, to breed
young. See *Reaumur's History of Insects*,
i.

ELLA, in zoology, a genus of the class
nides, order acera, family Ricinite. Generic
cter: palpi very slender, filiform bent,
g a seta at the extremity; eyes four; hind
he longest.

ELL'IUM, *n. s.* Gr. *βδέλλιον*, Heb.
An aromatick gum brought from the
t, used as a medicine and a perfume.
ium is mentioned both by the ancient na-
sts, and in Scripture; but it is doubtful
er any of these be the same with the modern

> This *bdellium* is a tree of the bigness of an olive, whereof Arabia hath great plenty, which yieldeth a certain gum, sweet to smell to, but bitter in taste, called also *bdellium*. The Hebrews take the loadstone for *bdellium*. *Raleigh.*

BDELLIUM is a gummy resinous juice, produced by a tree in the East Indies, of which we have no satisfactory account. It is brought into Europe, in pieces of different sizes and figures, externally of a dark reddish brown, somewhat like myrrh; internally it is clear, and not unlike glue. If held in the mouth, it soon becomes soft and tenacious, sticking to the teeth. Laid on a red-hot iron, it readily catches flame, and burns with a crackling noise, and in proportion to its goodness it is more or less fragrant. Near half of its substance dissolves either in water or in spirit of wine; but the tincture made with spirit is somewhat stronger and much more agreeable. Vinegar, or verjuice, dissolves it entirely. The simple gum is a better medicine than any preparation from it. Though one of the weakest of the deobstruent gums, it is sometimes used as a pectoral and an emmenagogue with advantage. Some authors suppose the word translated bdellium (Gen. ii. 12) signifies a precious stone; others fine crystal or steel; and Bochart insists that it denotes pearls, numbers of which are fished near the mouth of the river Pison, in the gulf of Persia.

BE, *v.* } BE'ING, *n.* } This verb is so remarkably irregular, that it is necessary to set down many of its terminations:

Present. *I am, thou art, he is, we are,* &c.
eom, eaꞃꞇ, ıꞅ, aꞃon, Sax.
Preter. { *I was, thou wast* or *wert,*
ƿæꞅ, ƿæꞃe,
he was, we were, &c.
ƿaꞃ ƿæꞃon, Sax. }
The conjunctive mood,
I be, thou beest, he be, we be, &c.
beo, bıꞅꞇ, beo, beon, Sax.

Its etymology is as uncertain as its forms are irregular. The simple words to which *be* is prefixed, are used also in their simple form as verbs. When employed as an auxiliary, it renders the verb passive. As a prefix, it appears in many instances to give emphasis to the application of the simple term. As to *bedaub*, to *bepraise*, to *besmear*, and particularly, say the compilers of the Encyclopedia Metropolitana, when derision or contempt is intended, as *becurl*, in Search; *bemuffle*, &c. in Sterne; *beprose*, in Mallet; *bescutcheon*, *betagged*, in Churchill; *betailed*, in Goldsmith. To exist, to have existence. It is also used in our old language, for the preposition *by*, and also for the participle *been*.

> And who so saith, and weneth it *be*
> A jape, or els a nicete,
> To wene that dremes after fal,
> Let who so liste a fole me call;
> For this trowe I and say for me,
> That dreames signifiaunce *be*
> Of gude and harme to many wightes,
> That dremen in hir sleep a nightes,
> Full many thinges covertly,
> That fallen after openly.
> *Chaucer. Romaunt of the Rose.*

Before this world's great frame, in which all things
Are now contain'd found any *beeing* place,
That high eternal pow'r which now doth move
In all these things, mov'd in itself by love.
Spenser. Hymn on Heavenly Love.

BEL. Aye hopeless
To have the courtesy your cradle promis'd,
But to *be* still hot summer's tanlings and
The shrinking slaves of winter.
GUI. Than *be* so,
Better to cease to *be*. *Shakspeare.*

Awake! arise! or *be* for ever fall'n. *Milton.*

The mind is its own place, and in itself
Can make a heav'n of hell, a hell of heav'n.
What matter where, if I *be* still the same,
And what I should be, all but less than he,
Whom thunder had made greater! Here at least
We shall *be* free. *Id.*

Neither did thy wisdom herein proceed in time only; but in degrees; at first thou madest nothing absolute; first thou madest things which should have *being* without life; then those which should have life and *being*; lastly, those which have *being*, life, and reason: so we ourselves in the ordinary course of generation, first live the life of vegetation, then of sense, and reason afterwards. *Hall. Con.*

O Happiness! our *being's* end and aim!
Good, Pleasure, Ease, Content, whate'er thy name;
That something still which prompts the eternal sigh,
For which we bear to live, or dare to die;
Which still so near us, yet beyond us lies;
O'erlook'd, seen double by the fool and wise.
Pope. Essay on Man.

Men would *be* angels, angels would *be* gods;
Aspiring to *be* gods if angels fell,
Aspiring to *be* angels, men rebel,
And who but wishes to invert the laws
Of order, sins against th' Eternal cause. *Id.*

For who, to dumb forgetfulness a prey,
This pleasing, anxious, *being* e'er resign'd,
Left the warm precincts of the cheerful day,
Nor cast one longing, ling'ring look behind.
Gray's Elegy in a Country Churchyard.

From courts and thrones return, apostate praise!
Thou prostitute! to thy first love return.
Thy first, thy greatest, once unrivall'd theme.
Back to thy fountain; to that parent power,
Who gives the tongue to sound, the thought to soar,
The soul to *be*. *Young.*

This is the bud of *being*, the dim dawn;
Life's theatre as yet is shut, and death,
Strong death, alone can heave the massy bar,
This gross impediment of clay remove,
And make us embryos of existence free. *Id.*

Count o'er the joys thine hours have seen,
Count o'er thy days from anguish free
And know whatever thou hast been
'Tis something better not to *be*. *Byron.*

BEACH, *n.*
BE'ACHED, *adj.*
BEACHY.

It is not to be found in any of our early lexicons. Dr. Johnson offers no etymology. Serenius gives the Goth. *backar*, signifying the same as beach. The Ency. Metro. ventures to conjecture that it is derived from *beag* (from *bigan* vel *bugan*, to bend, to wreathe) whatever girds or surrounds. The shore, particularly that part that is dashed by the waves. The loose stones that lie between the waters' edge and the main land.

The fishermen, that walk upon the *beach*,
Appear like mice. *Shakspeare. King Lear.*

Timon hath made his everlasting mansion
Upon the *beached* verge of the salt flood;
Which, once a day, with his embossed froth
The turbulent surge shall cover. *Shakspeare.*

The *beachy* girdle of the ocean
Too wide for Neptune's hips. *Id.*

What! are men mad? Hath nature given them eyes
To see this vaulted arch, and the rich crop
Of sea and land, which can distinguish 'twixt
The fiery orbs above, and the twinn'd stones
Upon the number'd *beach?* And can we not
Partition make with spectacles so precious
'Twixt fair and foul? *Id.*

Deep to the rocks of hell the gather'd *beach*
They fasten'd, and the mole immense wrought on
Over the foaming deep. *Milton.*

They find the washed amber further out upon the *beaches* and shores, where it has been longer exposed. *Woodward.*

Nor far remote
A broken torch—an oarless boat—
And tangled on the weeds that heap
The *beach* where shelving to the deep—
There lies a white capote!
'Tis rent in twain—one dark-red stain
The wave yet ripples o'er in vain.
Byron. Bride of Abydos

BEACH HILL, an ancient artificial mount, north of Coupar in Angus, on which justice is said to have been formerly administered in the open air. From the top of it there is a delightful prospect of the meandering of the Isla, through a fertile and extensive champaign country, variegated with fruitful fields and thriving villages. Some Roman urns have have been found on this mount.

BEACHLEY, or OLD PASSAGE, a point of land at the confluence of the Wye and Severn, Gloucestershire; which from its insulated position has always been considered an important military post. Earth works of ancient British origin are still remaining; and it is the terminating point of Offa's dyke. Here the Royalists, whom prince Rupert had sent forth to fortify the point in the wars of the commonwealth, were dislodged with great loss, and afterwards defeated in a pitched battle. The royalist commander, Sir John Wyntour, is said to have escaped by a hazardous leap from a cliff, still called Wyntour's Leap.

BEACHY-HEAD, on the coast of Sussex. It is known to sailors by the name of the Seven Cliffs. The summit of the highest cliff, which is also the highest in the south of England, is 575 feet from the base. From this promontory to Arundel the hills are called South Downs, and are celebrated as sheep walks. On the west side of Beachy-Head is an artificial cavern, named Parson Darby's Hole; consisting of two apartments, just above high water mark, dug out of the solid chalk. Tradition asserts it to have been the residence of a recluse, who was minister of East Dean.

BE'ACON, *v.* & *n.*
BE'ACONED,
BE'ACONAGE.

Sax. beacon, from becn, a signal, and becnan, whence beckon, to make a signal. Skinner thinks it is derived from the Ang.-Sax be, and cennan, to ken, to see. Any thing so placed, says the Ency. Met. that it may be kenn'd, seen, or distinguished; intended as a sign, notice, or warning, is a con. Its specific description connects with it instantaneous firing, in the moment of alarm from an enemy; or of a constant light in the darkness, to direct navigators in their course, and warn them from rocks, shallows, and sandbanks.

His blazing eyes, like two bright shining shields,
Did burn with wrath, and sparkled living fire;
As two broad *beacons* set in open fields
Send forth their flames. *Spenser. Faerie Queene.*

Modest doubt is call'd
The *beacon* of the wise. *Shakspeare.*

The king seemed to account of Perkin as a May-game; yet had given order for the watching of *beacons* upon the coasts, and erecting more where they stood too thin. *Bacon.*

No flaming *beacons* cast their blaze afar,
The dreadful signal of invasive war. *Gay.*

On the top of the steeple there remains an iron pitchpot, designed as a *beacon*, to be fired occasionally, to alarm the country in case of invasion. It takes its name from the Saxon becnian, to call by signs.
Pennant's Tour from Chester. Hoadley Church.

Wherefore, among other reasons, a suit for *beaconage* of a *beacon* standing on a rock in the sea, may be brought into the court of Admiralty, the admiral having an original jurisdiction over *beacons*.
Blackstone. Comment. III.

The haven hums with many a cheering sound,
The *beacons* blaze their wonted stations round.
Byron.

The bat builds in his haram bower;
And in the fortress of his power
The owl usurps the *beacon* tower.
Id. Giaour.

Beacons anciently were intended as signals for the better securing the kingdom from foreign invasions.—See Signal. On certain eminent places of the country were erected long poles, whereon were fastened pitch barrels to be fired by night, and to smoke by day, to give notice in a few hours to the whole kingdom of an approaching invasion. These served to communicate intelligence as rapidly as the modern invention of the telegraph. We find beacons frequently used among the primitive Britons and Western Highlanders. The besieged capital of one of our northern isles in the third century lighted up a fire upon a tower, and Fingal knew 'the green flame edged with smoke' to be a token of attack and distress, (Ossian, vol. i. p. 195). There are to this day several cairns or heaps of stones upon the heights along the coasts of the Harries, on which the inhabitants used to burn heath as a signal of an approaching enemy.

Beacons on the sea coasts, for guiding and preserving vessels at sea, by night as well as by day, are erected by the king's authority, being a branch of the royal prerogative. The king has the exclusive power, by commission under his great seal, to cause beacons, light-houses and sea marks to be erected in fit and convenient places, as well upon the lands of the subject, as upon the demesnes of the crown: which power is usually vested by letters patent in the office of lord high admiral. And by statute 8 Eliz. c. 13. the corporation of the Trinity-house are empowered to set up any beacons or sea-marks wherever they shall think them necessary; and if the owner of the land or any other person shall destroy them, or shall take down any steeple, tree, or other known sea-mark, he shall forfeit £100, or, in case of inability to pay it, shall be ipso facto outlawed.

Beaconage, a tax paid towards the maintenance of a beacon.

Beacon-Hill, a high rock in the parish of Muthil, in Perthshire, from whence a fire in the night might be seen at the distance of fifty miles east. The top of it is flat, and covered with ashes to a considerable depth. It is within two miles of Strageath, and may be seen from Camp's Castle, and from almost every part of a Roman road, which runs from Strageath for several miles eastward, in a straight line, to the parks of Gask, where there are still the remains of a Roman station. From all which it is evident that it has been a place of signals, and hence derived its name. It is also called Eagle's Craig.

Beacon-Hill, 1. a hill in Essex, on the south side of the mouth of the port of Harwich, with a light-house on it: 2. another in Wiltshire, between Marlborough and Sandy-Lane.

BEACONSFIELD, a town of Buckinghamshire, seated on a hill in the road between London and Oxford; eight miles from Marlow and Uxbridge, and twenty-five W.N.W. of London. It has a market on Thursday, and two fairs, February 13th, and Holy Thursday. In its vicinity was the residence of the poet Waller, at Hall Barn, and of Edmund Burke, at Butler's Court. The duke of Portland's seat, Bulstrode, is also within a short distance. Population about 1736.

BEACUL, a town and fortress of Hindostan, in South Canara, on a point of land projecting into the sea. It consists of about 100 houses. Long. 75° 9′ E., lat. 12° 22′ N.

BEAD,
Bead'roll,
Beads'man,
Beads'woman,
Beads'bidding,

From *bede*, Ang. Sax. a prayer; the past participle of *biddan*, *orare*, to bid; to invite; to solicit; to request; to pray: *bead* is likewise a small globe, or ball of glass, or pearl, or other substance; a number of these, strung upon a thread, are used by Papists to count their prapers. *Beadroll* is a catalogue of prayers, or, perhaps, originally a list of those to be prayed for in church, afterwards any list. *Beadsman*, a prayer man, commonly one who prays for another. From this use *beads* obtained their name, which are now any small globular body, and most frequently used to denominate the little balls which are threaded and worn about the neck for ornament.

A paire of *bedes* eke she bere
Upon a lace, all of white threde,
On which that she her *bedes bede*:
But she ne bought hem nevre a dele,
For they were given hire, I wot wele
God wote of a full holie frere,
That said he was her father dere,
To whom she hod oftener went
Than any frere of his covent. *Chaucer.*

Where that old woman day and night did pray
Upon her *beades* devoutly penitent;
Nine hundred Pater-nosters every day,
And thrice nine hundred Aves she was wont to say,

And to augment her painful penance more
Thrice every day in ashes she did sit,
And next her wrinkled skin rough sackcloth wore,
And thrice three times did fast from any bit.
Spenser.

An holy hospital,
In which seven *beadsmen*, that had vowed all
Their life to service of high heaven's king.
Faerie Queene.

It was a friar of orders gray
Walk'd forth to tell his *beads*,
And he met with a lady fair,
Clad in a pilgrim's weeds. *Old Ballad.*

With scarfs, and fans, and double charge of brav'ry,
With amber bracelets, *beads*, and all such knavery.
Shakspeare.

Thy spirit within thee hath been so at war,
That *beads* of sweat have stood upon thy brow. *Id.*

In thy danger
Commend thy grievance to my holy prayer;
For I will be thy *beadsman*, Valentine. *Id.*

The king, for the better credit of his espials abroad, did use to have them cursed by name amongst the *beadroll* of the king's enemies. *Bacon's Henry VII.*

'Twas such a bountie
And honour done to your poore *bedes woman*,
I know not how to owe it, but to thanke you.
Ben Jonson. The Sad Shepherd.

Several yellow lumps of amber, almost like *beads*, with one side flat, had fastened themselves to the bottom. *Boyle.*

Bring the holy water hither,
Let us wash and pray together:
When our *beads* are thus united,
Then the foe will fly affrighted. *Herrick.*

For who would rob a hermit of his weeds,
His few books, or his *beads*, or maple dish,
Or do his gray hairs any violence. *Milton. Comus.*

Then might ye see
Cowls, hoods, and habits, with their wearers tost
And flutter'd into rags; then reliques, *beads*,
Indulgencies, dispenses, pardons, bulls,
The sport of winds. *Milton's Paradise Lost.*

While the disjointed abbess threads
The gingling chain-shot of her *beads*. *Marvell.*

Tell your *beads*, says the priest, and be fairly truss'd up,
For you surely to-night shall in paradise sup.
Prior. Thief and Cordelier.

He taketh candle, *beades*, and holy watere,
And legends eke of saintes, and bookes of prayere;
He entereth the room, and looketh round about,
And haspen the door to haspen the goblin out.
Gay. Imitation of Chaucer.

Thy voice I seem in every hymn to hear,
With ev'ry *bead* I drop too soft a tear. *Pope.*

Much is the Virgin teas'd, to shrive them free
From crimes as numerous as her *beadsmen* be.
Byron.

Bead, in architecture, a round moulding, commonly made upon the edge of a piece of stuff, in the Corinthian and Roman orders, cut or carved in short embossments, like beads, in necklaces. A plain bead is sometimes set on the edge of each fascia of an architrave, and sometimes also an astragal is thus cut. It is not uncommon to place a bead on the lining board of a door-case, or on the upper edges of skirting boards.

Bead, in assaying, the small lump or mass of pure metal separated from the scoriæ, and seen distinct and pure in the middle of the cupel while in the fire. Thus, in separating silver from its ore by means of lead, the silver remains in the form of a bead, when the lead, that had before assisted in the operation, is reduced to scoria. In this process, the bead of silver must be taken out of the cupel as soon as it is observed to be pure, lest, gowing cold, it should be conglutinated to the cupel or litharge. This bead, when the assay is properly made, is always porous on the under side. See Assaying.

Beads, in commerce, those glass globules vended to the savages on the coast of Africa; thus denominated, because they are strung together for the convenience of traffic.

Beads, in devotional exercises, are much used by Roman Catholics, as in rehearsing and numbering their Ave-Marias and Pater-nosters; and a similar practice prevails among the dervises and other religious throughout the East, as well Mahommedan as Heathen. The ancient Druids appear also to have had their beads, many of which are still found; at least, if the conjectures of an ingenious author may be admitted, who takes those antique glass globules, having a snake painted round them, and called adder-beads, or snake-buttons, to have been the beads of our ancient Druids.

Beads, Bidding of the, a charge given by the Romish priests to their parishioners, at certain times, to say so many Pater-nosters upon their beads for a soul departed.

Beads, used in necklaces, are made of various materials, such as steel, garnet, coral, diamond, amber, crystal, pastes, &c. The common black glass of which beads are made for necklaces, &c. is colored with manganese only: one part of manganese is sufficient to give a black color to near twenty of glass.

BEA'DLE, } Sax. bẏꝺell, a messenger;
Beadle'ship. } Fr. *bedeau*, Span. *bedel*, Dut. *bedelle*. Junius derives it from *biddan*, *beadan*, to bid, to tell, to order; because he proclaims and executes the will of his superiors. *Beadleship* is the office of a *beadle*, it occurs in Wood's Athenæ Oxon. vol. ii. fol. 388.

A dog's obey'd in office.
Thou rascal *beadle*, hold thy bloody hand:
Why dost thou lash that whore? *Shakspeare.*

And I, forsooth, in love!
I that have been love's whip:
A very *beadle* to a humourous sigh,
A critick; nay, a night-watch constable. *Id.*

They ought to be taken care of in this condition, either by the *beadle* or the magistrate. *Spectator.*

Their common loves a lewd abandon'd pack,
The *beadle's* lash still flagrant on their back.
Prior.

Beadle is also used for an officer in universities, whose place is to walk before the [illegible] at all public processions, &c. with a [illegible] Spelman, Vossius, and Sumner, derive [illegible] from the Saxon; in which sense bishops, in [illegible] ancient Saxon manuscripts, are called beadles [illegible] God, Dei bedelli. The translator of the [illegible] New Testament renders exactor by bidele; [illegible] the word is used in the same sense in the [illegible] Scotland.

s chiefly applied in Scotland to those
ts who keep the keys of the churches
nd occasionally attend the ministers
ions, in the exercise of their parochial
office is somewhat similar, though
respect, to that of Church Warden

kers, called by the French pater-
e those employed in the making,
nd selling of beads, for devotional
At Paris, before the revolution, there
ompanies of bead-makers; one who
of glass or crystal; another of wood
and the third of amber, coral, jet,

oof, a term used by distillers to ex-
rt of proof of the standard strength of
quors, which consists in their having,
in a phial, or poured from on high
a crown of bubbles, which stand on
ome time after. This is esteemed a
he spirit consists of equal parts of
rits and phlegm. It however is a
le as to the degree of strength in the
use any thing that will increase the
the spirit, will give it this proof,
under the due strength.
oof. A method of ascertaining the
spirituous liquors, invented by Mr.
Glasgow. It consists of a number
ss globules, or beads, marked so as
d with the degrees of a hydrometer.
have a small glass cylinder appended
ch, being ground with emery, they are
e degree of lightness required. They
n a box, and being thrown into any
quor, at a medium temperature, say
s of Fahrenheit, the bead which re-
nded in any part of it denotes the
ity or the proportion of spirit it con-
No. 1. remains suspended in any
illed water, of the required tempera-
is the standard from which the pro-
pirit is computed. No. 32. remains
n any part of pure alkohol; and all
diate beads indicate various propor-
er and spirit in the mixture. When
are made with accuracy, they seem
nore easy method of ascertaining the
spirits than any yet invented. See
er.
E. Fr. *bigles*, perhaps from the Ital.
cani piccoli, smaller dogs. A small
which hares are hunted.

gle true-bred, and one that adores me.
Shakspeare.

rest were various huntings.
goddess was array'd in green;
et were little *beagles* seen,
with upward eyes the motions of their
.
Dryden's Fables.

with well-bred *beagles* we repair,
mazes of the circling hare. *Pope.*

e the deep-mouth'd *beagles* catch
nazes; and, on eager sport
mulous impatience try
d trace. *Armstrong.*

Beagle, in zoology, a valuable dog, kept entirely for hunting hares; they are of small size, inferior to the hare in swiftness, but possess a very delicate scent; and when they have found her, seldom fail of running a hare down.

Beagles are of various kinds, as the southern beagle, something less and shorter, but thicker, than the deep mouthed hound; the fleet northern or cat beagle, smaller, and of a finer shape than the southern, and a harder runner. From these two, by crossing, is bred a third sort, held preferable to either. To these may be added a still smaller sort of beagles, scarce bigger than lap-dogs, which make pretty diversion in hunting the coney, or even the small hare in dry weather; but are otherwise unserviceable by reason of their size.

BEAK',
Beak'ed,
Beak'er,
Beak-head.

Ang.-Sax. *pycan*, Ger. *picken*, to pick or peck. The *beak*, says the Encyclopedia Metropolitana, is that which picketh or pecketh. It is applied generally to whatever is pointed or sharp. Thus the bill of a bird is called its beak; the cup called a beaker, derives its name from the shape of its spout. But the Dutch *beker* Vossius derives from the Lat. *bacar*, and thus *bacar* or *baccar*, says the just mentioned authority, is perhaps from *Bacchus*. It means a vessel or cup for wine. This is a little forced. The term *beak* is now used to signify the fore-part of a ship. In the ancient galleys it was a piece of brass like a beak, fixed at their end, with which they pierced their enemies. It is also applied to a shoe peculiarly constructed, and to a prominence of land.

Father, I sweare by Ibis' golden *beake*,
More fair and radiant is my bonny Kate,
Then silver Xanthus, when he doth embrace
The ruddy Simois at Ida's feet. *Whetstone.*

A little wren in *beake* with laurell greene that flew,
Foreshew'd my doleful death, as after all men knew.
Mirror for Magistrates.

His royal bird
Prunes the immortal wing, and cloys his *beak*,
As when his god is pleas'd.
Shakspeare. Cymbeline

I boarded the king's ship, now on the *beak*,
Now in the waist, the deck, in every cabin. *Id.*

The floating vessel swam
Uplifted, and secure with *beaked* prow,
Rode tilting o'er the waves.
Milton. Paradise Lost.

He asked the waves, and ask'd the felon winds,
What hard mishap hath doom'd this gentle swain?
And question'd every gust of rugged wings
That blows from off each *beaked* promontory:
They knew not of his story;
And sage Hippotades their answer brings,
That not a blast was from his dungeon stray'd:
The air was calm, and on the level brine
Sleek Panope with all her sisters play'd.
Id. Lycidas

Him thought, he by the brook of Cherith stood;
And saw the ravens with their horny *beakes*,
Food to Elijah bringing ev'n and morn.
Id. Paradise Regained.

With boiling pitch, another near at hand,
From friendly Sweden brought, the seams instops;
Which well laid o'er, the salt sea waves withstand,
And shake them from the rising *beak* in drops.
Dryden.

The magpie, lighting on the stock,
Stood chatt'ring with incessant din,
And with her *beak* gave many a knock.
Swift.

And into pikes and musqueteers
Stampt *beakers*, cups, and porringers.
Hudibras.

With dulcet bev'rage this the *beaker* crown'd,
Fair in the midst with gilded cups around.
Pope. Odyssey.

The hooked *beak* of the hawk-tribe, separates the flesh from the bones of the animal which it feeds upon, almost with the cleanness and precision of a dissector's knife. *Paley's Natural Theology.*

It is as if the desart bird,
Whose *beak* unlocks her bosom's stream,
To still her famish'd nestlings' scream,
Nor mourns a life to them transferr'd;
Should rend her rash devoted breast,
And find them flown her empty nest.
Byron. Giaour.

Beak, in ancient military affairs, was used for one of the battalia, or forms of ranging an army for battle, particularly by the Macedonians.

Beak, in architecture, a little fillet left on the edge of a larmier, which forms a canal, and makes a kind of pendent chin, answering to what Vitruvius calls the mentum.

Beak, in farriery, denotes a little horse-shoe, turned up, and fastened in upon the fore part of the hoof. It is used to keep the shoes fast, and to prevent them from being struck off by the horse, when by reason of any itch, or being much disturbed by the flies in hot weather, he stamps his feet violently on the ground.

Beak, in orthinology: from the form and structure of the beaks of birds, Linnæus divides this whole family, or general class of animals, into six orders. See ORNITHOLOGY.

Beak, or **Beak-Head**, of a ship, that part without the ship, before the forecastle, which is fastened to the stem, and is supported by the main knee. It is usually carved and painted, which adds beauty to utility. The beak, called by the Greeks *εμβολον*, by the Latins rostrum, was an important part in the ancient ships of war, which were hence denominated naves rostratæ. The beak was made of wood, but fortified with brass and fastened to the prow, serving to annoy the enemy's vessels. Its invention is attributed to Pisæus, as Italian. The first beaks were made long and high; but afterwards a Corinthian, named Aristo, contrived to make them short and strong, and placed so low as to pierce the hostile vessels under water. By the help of these, great havoc was made by the Syracusans in the Athenian fleet.

Beaked, in heraldry, a term used to express the beak or bill of a bird. When the beak and legs of a fowl are of a different tincture from the body, we say beaked and membered of such a tincture.

BEALE, a river of England, which runs through part of the counties of Sussex and Kent, and falls into the Medway.

Beale (Mary), particularly distinguished by her skill in painting, was the daughter of Mr. Craddock, minister of Walton-upon-Thames, and learned the rudiments of her art from Sir Peter Lely. She painted in oil, water colors, and crayons, and had much business; her portraits were in the Italian style, which she acquired by copying pictures from Sir Peter Lely's and the royal collections. Her master, says, Mr. Walpole, was supposed to have had a tender attachment to her; but as he was reserved in communicating to her all the resources of his pencil, it probably was a gallant rather than a successful one. Dr. Woodfall wrote several pieces to her honour, under the name of Belisia. Mrs. Beale died in Pall-mall, in 1697, aged 65. Her paintings have much nature, but the coloring is stiff and heavy.

BEALSBURG, a town of the United States of America, in Kentucky, seated on the east bank of the Rolling-fork. It is fifteen miles W.S.W. of Bairdstown, fifty south-west of Frankfort, and 890 from Philadelphia.

BEALT, or **Bualth** or **Builth**, an ancient town in the hundred of Builth, and county of Brecon, agreeably situated on the western bank of the river Wye, in a romantic and extremely picturesque vicinity. It is 173 miles from London, contains a population of 946 souls, holds markets on Mondays, and fairs five times in every year. Two of the streets are convenient, well disposed, and adorned by the parish church, four meeting houses of dissenters, the free school, founded in 1752, by Thomas Prichard, Esq., several comfortable inns, and many substantial private dwellings. The Gwynnes of Llanelwedd Hall, are lords of the manor of Builth. The contiguity of this place to the saline springs of Park-Wells has occasioned an increase in the number of wealthy and respectable inhabitants within the last twenty years. This was the Bulloeum of the Romans, and many curious reliques of that bold nation are daily found in the adjacent districts. The castle, of Norman erection, is beautifully situated on the summit of a picturesque hill. It was once possessed by the Mortimers but now belongs to the Gwynnes. Llewellyn, the last reigning prince of Wales was slain near this place, and his remains interred at a spot called "Cefn y bedd Llewellyn," a little distance from the town.

BEAM, *n.* } *Bagms*, Goth. *beam* Ang.-Sax. a tree; the etymology uncertain; the applications are various. See our scientific articles under this term.
Beamlike, *adj.*
Bea'my.

Poise the cause in justice' equal scales,
Whose *beam* stands sure, whose rightful cause prevails.
Shakspeare.

The building of living creatures is like the building of a timber house; the walls and other parts have columns and *beams*, but the roof is tile, or lead, or stone. *Bacon.*

So much they could with their chariots by use and exercise, as riding on the speed down a steep hill, to stop suddenly, and with short rein turn swiftly, now running on the *beam*, now on the yoke, then in the seat. *Milton. Hist. Eng.*

He heav'd, with more than human force to mount
A weighty stone, the labour of a team,
And rais'd from thence he reach'd the neighb'ring
beam.
Dryden.

BEAM, *v. n.*
Bea'mless,
Bea'my.
} Ang.-Sax. *beamun*, to shine, to emit rays, as from the sun; any thing radiant.

Is aught on earth so pretious or deare
As praise and honour? or is ought so bright
And beautifule as glories *beames* appeare,
Whose goodly light than Phœbus lampe doth shine more clear? *Spenser.*

How shall a worm, on dust that crawls and feeds,
Climb to th' empyreal court, where these states reign,
And there take view of what heav'n's self exceeds?
The sunless stars, these lights the sun distain:
Their *beams* divine, and beauties do excel
What here on earth, in air, or heav'n do dwell:
Such never eye yet saw, such never tongue can tell.
Fletcher's Purple Island.

Pile ten hills on the Tarpeian rock,
That the precipitation might down stretch
Below the *beam* of sight.
Shakspeare. Coriolanus.

Sunk though he be beneath the wat'ry floor;
So sinks the day-star in the ocean bed,
And yet anon repairs his drooping head,
And tricks his *beams*, and with new spangled ore,
Flames in the forehead of the morning sky;
So Lycidas sunk low, but mounted high.
Milton. Lycidas.

No sun to cheer us but a bloody globe,
That rolls above, a bald and *beamless* fire.
Dryden and Lee.

What modes of sight betwixt each wide extreme,
The mole's dim curtain, and the lynx's *beam*. *Pope.*

Truth bids me look on men, as autumn's leaves,
And all they bleed for, as the summer's dust,
Driven by the whirlwind: lighted by her *beams*,
I widen my horizon, gain new powers,
See things invisible, feel things remote,
Am present with futurities; think nought
To man so foreign as the joys possest,
Nought so much his as those beyond the grave.
Young.

Attempered suns arise,
Sweet-*beam'd* and shedding oft thro' lucid clouds
A pleasing calm, while broad and brown below,
Extensive harvests hang the heavy head.
Thomson's Seasons.

The ghastly form,
The lip pale quiv'ring and the *beamless* eye.
Id. Summer.

But lo! from high Hymettus to the plain,
The queen of night asserts her silent reign.
No murky vapour, herald of the storm,
Hides her fair face, nor gilds her glowing form;
With cornice glimmering as the moon-*beams* play,
There the white column greets her grateful ray,
And bright around with quivering *beams* beset
Her emblem sparkles o'er the minaret.
Byron. Corsair.

O Peace, thy injured robes upbind!
O rise, and leave not one behind
Of all thy *beamy* train.
Collins's Ode to Peace.

One cultivated spot there was, that spread
Its flowery bosom to the noon-day *beam*,
Where many a rose-bud rears its blushing head,
And herbs for food with future plenty team.
Beattie's Minstrel.

Beam, in architecture. Some of the best authors have considered the force or strength of beams, and brought their resistance to a precise calculation: particularly M. Varignon and M. Parent. The system of the latter is as follows When, in a beam breaking parallel to its base which is supposed to be a parallelogram, two planes of fibres, which were before contiguous, are separated, there is nothing to be considered in those fibres, but their number, bigness, tension before they broke, and the lever by which they act: all these together make the strength or resistance of the beam to be broke. Suppose then another beam of the same wood, where the base is likewise a parallelogram, and of any bigness, with regard to the other, the height or thickness of each of these when laid horizontal, being divided into an indefinite number of equal parts, and their breadth into the same number, in each of their bases will be found an equal number of little quadrangular cells, proportionate to the base whereof they are parts. These then will represent little bases, or, which is the same thing, the thicknesses of the fibres to be separated by the fracture of each beam: and, since the number of cells is equal in each, the ratio of the bases of both beams will be that of the resistance of their fibres, both with regard to number and thickness. Now the two beams being supposed to be of the same wood, the fibres most remote from the points of support, which are those which break first, must be equally stretched, when they break. Thus the fibres, e. g. of the tenth division, are equally stretched in each case, when the first breaks; and in whatever proportion the tension be supposed, it will still be the same in both cases; so that the doctrine is entirely free and unembarrassed with any physical system.—Lastly, the levers whereby the fibres of the two beams act, are represented by the height or depth of their bases; and of consequence the whole resistance of each beam is the product of its base by its height; or, it is the square of the height multiplied by its breadth: which holds not only in case of parallelogrammatic, but also of elliptic bases. Hence, if the base of two beams be equal, though both their heights and breadths be unequal, their resistance will be as their heights alone; and, by consequence, the same beam laid on the smallest side of its base will resist more than when laid flat, in proportion as the first situation gives it a greater height than the second: and thus an elliptic base will resist more when laid on its greatest axis, than when on its smallest. Since in beams equally long the bases determine the proportion of their weights or solidities, and since their bases being equal, their heights may be different, two beams of the same weight may have resistances differing to infinity: thus, if in one the height of the base be supposed infinitely great, and the breadth infinitely small, while in the other the dimensions of the base are infinite; the resistance of the first will be infinitely greater than that of the second, though their solidity and weight be the same. If, therefore, all that was required in architecture were to have beams capable of supporting vast loads, and at the same time to be of the least weights possible, it is plain they must be cut thin as laths and laid edgeways. If the bases of two beams be supposed unequal, but the sum of the sides of the two bases equal, e. g. if they be either 12 and 12, or 11 and 13, or 10 and 14, &c. so that they always make 24; and further, if they be supposed to be laid edgeways; pursuing the series, it will appear, that in the beam of 12 and 12, the resistance will be 1728, and the solidity or weight 144: and that in the last, or 1 and 23, the resistance will be 529, and the weight 23: the first, therefore, which is square, will have less than half the strength of the last, with regard to its weight. Hence M. Parent remarks, that the common practice of cutting the beams out of trees as square as possible is reprehensible: he hence takes occasion to determine geometrically, what dimensions the base of a beam to be cut out of any tree proposed shall have, in order to its being of the greatest possible strength; or, which is the same thing, a circular base being given, he determines the rectangle of the greatest resistance that can be inscribed; and finds that the sides must be nearly as 7 to 5, which agrees with observation. Hitherto the length of the beams has been supposed equal; if it be unequal, the bases will resist so much the less, as the beams are longer. To this it may be added, that a beam sustained at each end, breaking by a weight suspended from its middle does not only break at the middle, but also at each extreme; or, if it does not actually break there, at least immediately before the moment of the fracture, which is that of the equilibrium between the resistance and the weight, its fibres are as much stretched at the extremes as in the middle. So that of the weight sustained by the middle there is but one-third part which acts at the middle to make the fracture; the other two only acting to induce a fracture in the two extremes. A beam may either be supposed only loaden with its own weight, or with other foreign weights applied at any distance, or else only with those foreign weights. Since, according to M. Parent, the weight of a beam is not ordinarily above one-seventieth part of the load given it to sustain, it is evident that in considering several weights, they must all be reduced by the common rules to one common centre of gravity. M. Parent has calculated tables of the weights that will be sustained by the middle in beams of various bases and lengths, fitted at each end into walls, on a supposition that a piece of oak of an inch square and a foot long, retained horizontally by the two extremes, will sustain 315lb. in its middle before it breaks, which it is found by experience it will.

Beam, in heraldry, is used to express the main horn of a hart or buck.

Beam, in hunting, the main stem of a deer's head, or that part which bears the antlers, royals, and tops; the little streaks whereof are called circles.

Beam, or Roller, in weaving, is a long and thick wooden cylinder placed lengthways on the back part of the loom of those who use the shuttle. The threads of the warp of linen or woollen cloth, serges, or other woollen stuffs, are rolled upon the beam, and unrolled as the work goes on. That cylinder on which the stuff is rolled, as it is weaved, is also called the beam or roller, and is placed on the fore part of the loom.

Beam of a Balance, is that piece of iron or wood, somewhat bigger towards the middle than at the ends, where there are holes, through which run the ropes or strings which hold the scales; the beam is divided into two equal parts by a needle placed over it perpendicularly, and the centre of motion must be placed a little above the centre of gravity, that the beam may rest exactly in an horizontal position. See Balance.

Beam of an Anchor. The straight part or shank of an anchor, to which the hooks are fastened.

Beam of a Plough, a name given by our farmers to the great timber of the plough, into which all the other parts of the plough-tail are fixed. This is usually made of ash, and is straight, and eight feet long in the common plough: but in the four-coultered plough it is ten feet long, and its upper part is arched. The head of this beam lies on the pillow of the plough, and is raised higher, or sunk lower, as that pillow is elevated or depressed by being slipped along the crow-staves. Near the middle it has an iron collar, which receives the tow chain from the box, and the bridle chain from the stake or gallows of the plough is fixed in it a little below the collar. Some inches below this there is a hole, which lets through the coulter; and below that there are two other small ones, through which the heads of the retches pass. These are the irons which support the sheet, and with it the share. Farther backward still is a larger perforation, through which the body of the sheet passes; and behind that, very near the extremity, is another hole through which the piece called the hinder-sheet passes. See Husbandry.

Beams of a Ship are the large main cross timbers, stretching from side to side, which hold the sides of a ship from falling together, and which also support the decks and orlops of the ship. The main beam is that next the main mast; and from it they are reckoned by first, second, and third beam. The great beam is also called the midship beam. There are usually twenty-four beams on the lower deck of a ship of seventy-four guns, and to the other decks additional ones in proportion as the ship lengthens above. Hence the following phrases in sea language:–

Beam, Before the, signifies an arch of the horizon comprehended between the line of the beam, and that point of the compass which she stems.

Beam, on the, in sea language, denotes any distance from the ship on a line with the beams, or at right angles with the keel. Any object that lies east or west when the ship steers northward, is said to be on the starboard or larboard beam.

Beam, on the Weather, signifies on the weather side of the ship.

Beam-antler, the branch of a deer's horn next the head.

Beam-bird. See Motacilla.

Beam, Camber. See Camber Beam.

Beam Feathers, in falconry, the longest feathers of a hawk's wing.

Beam-filling, in architecture, the filling up the vacant space between the aising plate and roof with stones or bricks, laid between the rafters on the aising plate, and plastered on with loam; this is frequent where the garrets are not pargeted or plastered.

BEAMINSTER, a market town of Dorsetshire, in England, seated on the river Birtun, at miles from Bridport, and 141 west of London. A considerable manufactory of sail cloth, and also of iron and copper goods, is carried on here. It was nearly destroyed by fire in 1645 and 1686, and suffered severely from the same cause in 1781. Population 2290.

BEAN, } Saxon bean, bien, a well
BEAN'FED, } known vegetable. Etymology
BEAN'SHAPED. } unknown. Junius derives it from the Greek πυανον vel πυανος; but assigns in our opinion a very unsatisfactory reason—so called because they produce blood. And what food does not?

> But God wot that May thought in hire heste,
> When she him saw up sitting in his shirt,
> In his night cap, and with his necke lene:
> She praiseth not his playing worth a *bene*.
> *Chaucer.*

> And worse than that bare meat there did remain
> To comfort her when she her house had dight,
> Sometime a barley-corn, sometime a *bean*,
> For which she laboured hard both day and night.
> *Wyatt.*

> I jest to Oberon and make him smile,
> When I a fat and *beane*-fed horse beguile,
> Neighing in likenesse of a silly foale.
> *Shakspeare.*

> Long let us walk,
> Where the breeze blows from yon extended field
> Of blossom'd *beans* *Thomson. Spring.*

> On turnips feast whene'er you please,
> And riot in my *beans* and pease. *Gay's Fables.*

Why does the pea put forth tendrils, the *bean* not; but because the stalk of the pea cannot support itself, the stalk of the *bean* can! *Paley.*

BEAN. The old method of choosing king and queen on Twelfth-day, was by having a bean and a pea mixed up in the composition of a cake. They who found these in their portion of cake, were constituted king and queen for the evening.

> Now, now the mirth comes,
> With the cake full of plums,
> Where *beane's* the king of the sport here,
> Besides we must know,
> The pea also,
> Must revell as queene in the court here.
> *Herrick's Hesper.*

Cut the cake: who hath the *beane* shall be kinge; and where the pease is she shall be queene.
Nichol's Progresses.

You may imagine it to be twelfth day at night, and the *bean* found in the corner of your cake, but it is not worth a vetch, I assure you.
Middl. New Wond. Anc. Dr. 272.

BEANS. 'Three blue *beans* in a blue bladder.' What is the origin of this whimsical combination of words, it may not now be easy to discover, but at least it is of long standing.

> F. Hark, does't rattle?
> S. Yes, like three blue *beans* in a blue bladder, rattle bladder, rattle.
> *Old Fortunatus. Anc. Dr. III.* p. 128.

Prior has it in his Alma:—

> They say
> That putting all his words together
> 'Tis three blue *beans* in one blue bladder.
> *Cant. I.* v. 25.

BEAN, in botany. See VICIA.

BEANS, in antiquity, were applied to various uses. The ancients made use of beans in gathering the votes of the people, and for the election of magistrates. A white bean signified absolution, and a black one condemnation. Beans had a mysterious use in the lemuralia and parentalia; where the master of the family, after washing, was to throw a sort of black beans over his head, still repeating the words, 'I redeem myself and family by these beans.' Ovid gives a lively description of the whole ceremony in verse. Abstinence from beans was enjoined by Pythagoras, one of whose symbols is, κυαμον απεχεσθαι, abstine a fabis. The Egyptian priests held it a crime to look at beans, judging the very sight unclean! The flamen dialis was not permitted even to mention the name. The precept of Pythagoras has been variously interpreted: some understand it of forbearing to meddle in trials and verdicts, which were then by throwing beans into an urn; others build on the equivoque of the word κυαμος, and explain it by abstinence from sexual pleasures. Clemens Alexandrinus grounds the abstinence from beans on this, that they render women barren: which is repeated by Theophrastus, who extends the effect even to plants. Cicero suggests that beans are great enemies to tranquillity of mind. For a reason of this kind it is, that Amphiarus is said to have abstained from beans, even before Pythagoras, that he might enjoy a clearer divination by dreams.

BEANS, in dietetics, are said to be nutritive, but flatulent. The horse-bean has been often urged as a succedaneum for coffee, which in principles it much resembles; only that it contains but half the quantity of oil. Mr. Boyle describes several experiments of beans treated pneumatically to show the great plenty of air they afford, on which their flatulency is supposed to depend. The expansion of beans in growing, the same author found so considerable, that it would raise a plug clogged with above an hundred pounds weight.

BEANS, in farriery. See FARRIERY, INDEX.

BEANS, in fishing, with proper management, make the finest of all baits. The method of preparing them for that purpose is this: take a new earthen pot glazed on the inside, boil some beans in it, suppose a quarter of a peck: they must be boiled in river water, and should be previously steeped in some warm water for six or seven hours. When they are about half boiled, put in three or four ounces of honey, and two or three grains of musk; let them boil a little on, then take them off the fire. They are to be used in this manner: seek out a clean place where there are no weeds, that the fish may see and take the beans at the bottom of the water. Throw some in at five or six in the morning, and in the evening for some days. This will draw them together, and they may be taken in a casting net in great numbers.

BEAN, BOG, or BEAN, BUCK. See MENYANTHES.

BEAN, CAPER. Fabago. A plant. See ZYGOPHYLLUM.

BEAN-COD, a small fishing-vessel or pilot-boat, common on the sea coasts and in the rivers of Portugal. It is extremely sharp forward, having its stem bent inward above into a great curve;

the stem is also plated on the fore side with iron, into which a number of bolts are driven, to fortify it, and resist the stroke of another vessel, which may fall athwart-hause. It is commonly navigated with a large lateen sail, which extends over the whole length of the deck, and is accordingly well fitted to ply to windward.

Bean-flour, called by the Romans lomentum, was of some repute among the ancient ladies as a cosmetic, wherewith to smooth the skin, and take away wrinkles.

Bean-fly, in natural history, the name given by authors to a very beautiful fly, of a pale purple color, frequently found on bean-flowers. It is produced from the worm or maggot called by authors Mida.

Bean Goose, in ornithology. See Anas.

Bean, Kidney, in botany. See Phaseolus.

Bean Kidney, Tree. See Glycine.

Bean, Molucca, or Anacardium, the fruit of a tree growing in Malabar and other parts of the East Indies, supposed by some to be the Avicennia tomentosa; by others, the bontia germinans. The fruit is of a shining black color, of the shape of a heart flattened, about an inch long, terminating at one end in an obtuse point, and adhering by the other to a wrinkled stalk. It contains within two shells a kernel of a sweetish taste; betwixt the shells is lodged a thick and acrid juice or oil. The medicinal virtues of anacardia have been greatly disputed. Many have attributed to them the faculty of strengthening the nerves, fortifying the memory, and quickening the intellect. Hence a confection made from them was once dignified with the title of confectio sapientium; but which others have thought better deserving the name of confectio stultorum, as instances are said to have occurred of its having rendered people maniacal. But the kernel of anacardium is not different in quality from that of almonds. The ill effects attributed to this fruit belong only to the oil contained betwixt the kernels, whose acrimony is so great, that it is said to be employed by the Indians as a caustic. This oil is of service externally for tetters, freckles, and other cutaneous deformities; which it removes only by exulcerating or excoriating the part, so that a new skin comes underneath. See Anacardium.

Bean Tree. See Corallodendron.

Bean Tree, Binding. See Mimosa.

BEAR, *v.* } *v. a.* pret. *I bore*, or *bare*;
Bear'er, *n.* } part. pass. *bore* or *born*; Sax.
Bear'ing, } beoꞃan, beꞃan, beoran; Gothic
Bear'n. } *bairan*; Lat. *pario*; and Heb.

bara, to create. Dr. Johnson remarks, that this word is used with such latitude that it is not easily explained. The general divisions of its meaning are to yield, to bring forth; to carry, to convey, and to transport; to endure, to suffer, to support, and to undergo. Yet is it in all these various significations to be distinguished from the words employed to explain it. *Bear* conveys the idea of creating within itself; *yield* that of giving from itself. Animals bear their young; inanimate objects *yield* their produce. an apple tree *bears* apples; the earth *yields* fruits. *Bear* marks properly the natural power of bringing forth something of its own kind; *yield* is said of the results or quantum brought forth. Shrubs *bear* leaves, flowers, or berries, according to their natural properties; flowers *yield* seeds plentifully, or otherwise, as they are influenced by circumstances. The second class of meanings attaching to this word, the sense of retaining as well as generating, is expressed by the words *carry*, *convey*, and *transport*; but these are not synonymous to bear. To *bear* is simply to take the weight of any substance upon one's self; to *carry* is to remove that weight from the spot where it was; we always *bear* in *carrying*, but we do not always *carry* when we *bear*. Both may be applied to things as well as persons; whatever receives the weight of any thing *bears* it; whatever is caused to move with any thing *carries* it. *Convey* and *transport* are employed for such actions as are performed not by immediate personal intervention or exertion: a porter *carries* goods on his knot; goods are *conveyed* in a waggon or a cart; they are *transported* in a vessel. It is customary at funerals for some to *bear* the pall, and others to *carry* wands or staves; the body itself is *conveyed* in a hearse, unless it has to cross the ocean, in which case it is *transported* in a vessel. In the sense of suffering and endurance, which is the third class of meanings in which this word is to be understood, it is likewise to be distinguished from its exegetical representatives. To *suffer* is a passive and involuntary act; it denotes simply the being a receiver of evil; it is therefore the condition of our being; to *bear* is positive and voluntary, it denotes the manner in which we receive the evil. To *bear* is a single act of the resolution, and relates only to common ills; we *bear* disappointments and crosses; to *endure* is a continued and powerful act of the mind. The first object of education should be to accustom children to *bear* contradictions and crosses, that they may afterwards be enabled to *endure* every trial and misery. To *bear* and *endure* signify to receive becomingly the weight of what befalls ourselves: to *support* signifies to *bear* either our own or another's evils; for we may either support ourselves, or be supported by others; but in this latter case we *bear* from the capacity which is within ourselves; but we *support* ourselves by foreign aid, that is, by the consolations of religion, the participation and condolence of friends, and the like.—*Crabb*. An almost infinite variety of shades of meaning, approaching to and receding from these general divisions, must be observed by every one at all familiar with our best English writers.

> For in trauayl of hys *berying* hys moder was forded.
> *R. Gloucester.*

> For shall neuer brere *bere* beries as a vyne.
> *Piers Plouhman.*

> Lo! a virgyn schal haue in wombe and sche schal *bere* a sone, and they schulen clepe his name Emanuel.
> *Wiclif. Matt. chap. 1.*

> "I wol not fro the door wend
> Tyll I have my staff." Thou bribour than ber
> the todir end
> Quod hi that was within; and ley'd it on his bak
> Right in the same plase as chapmen bereth their pak.
> *Chaucer. Canterbury Tale.*

ıs mounted in his seat so high,
ving-footed coursers him did *beare*
vay, that ere his ready speare
advance, he farre was gone and past,
ıe him did follow everywhere. *Spenser.*

be proud that ever he begot
bellibone;
nx rejoice that ever was her lot
e such an one. *Id. Shepheard's Calendar.*

e, when so she doth display
pearles and rubies richly dight;
ı her words so wise do make their way,
ıessage of her gentle spright.
Id. Sonnets.

ıine indignation, mighty heaven,
us not to *bear* above our power!
Shakspeare.

t, I had rather *bear* with you, than *bear*
ould *bear* no cross, if I did *bear* you;
u have no money in your purse. *Id.*

he queen, that *bore* thee
ı her knees than on her feet,
day she liv'd. *Id.*

ome plants that *bear* no flower, and yet
ere be some that *bear* flowers and no
be some that *bear* neither flowers nor
Bacon.

ı his hands did help his feet to *bear*,
they ill so huge a burthen steer.
Fletcher's Purple Island.

ough in ruin: sage he stood
tean shoulders fit to *bear*
of mightiest monarchies. *Milton.*

all cut the waves for foreign ware
oil shall ev'ry product *bear*. *Dryden*,

e to the ghost of Priam *bear*;
w Achilles sent thee there.
Id. Æneid.

e him, a Trojan guest before,
iendship, sought the Spartan shore,
Helen from her husband *bore*. *Garth.*

Ye good distrest!
! who here unbending stand
pressure, yet *bear* up a while,
ır bounded view, which only saw
deem'd evil, is no more;
f wintry time will quickly pass,
ounded spring encircle all. *Thomson.*

a draggled damsel here and there
ngsgate her fishy traffic *bear*. *Gay.*

proper means of increasing the love we
ve country, is to reside some time in
Shenstone.

be brought into some such severe and
on as fixes the attention of the public on
,—the first question which we put con-
is not what does he suffer? but how does
f we judge him to be composed and firm,
providence, and supported by conscious
character rises, and his miseries lessen
Blair.

a prize of unregarded charms. *Byron.*

up; to stand firm without falling;
not to faint or fail.

So long as nature
up with his exercise, so long
w to use it. *Shakspeare.*

distress may speak of themselves with
hews a greatness of soul, that they *bear*
e storms of fortune. *Broome.*

The consciousness of integrity, the sense of a life spent in doing good, will enable a man to *bear up* under any change of circumstances. *Atterbury.*

When our commanders and soldiers were raw and unexperienced we lost battles and towns: yet we *bore up* then, as the French do now; nor was there any thing decisive in their successes. *Swift.*

To bear with. To endure an unpleasing thing.

They are content to *bear with* my absence and folly. *Sidney.*

Though I must be content to *bear with* those that say you are reverend grave men; yet they lie deadly, that tell you, you have good faces. *Shakspeare.*

Look you lay home to him,
Tell him his pranks have been too broad to *bear with.*
Id.

Bear with me, then, if lawful what I ask.
Milton.

To bear in hand. To amuse with false pretences; to deceive.

Your daughter, whom she *bore in hand* to love
With such integrity, she did confess,
Was as a scorpion to her sight. *Shakspeare.*

His sickness, age, and impotence,
Was falsely *bore in hand.* *Id.*

He repaired to Bruges, desiring of the states of Bruges to enter peaceably into their town, with a retinue fit for his estate; and *bearing* them *in hand*, that he was to communicate with them of matters of great importance, for their good. *Bacon.*

All which I suffer, playing with their hopes,
And am content to win them into profit,
And look upon their kindness, and take more,
And look on that, still *bearing* them *in hand.*
Ben Jonson.

It is no wonder, that some would *bear* the world *in hand*, that the apostle's design and meaning is for presbytery, though his words are for episcopacy.
South.

To bear off. To carry away.

I will respect thee as a father, if
Thou *bear'st* my life *off* hence. *Shakspeare.*

The sun views half the earth on either way,
And here brings on, and there *bears off* the day.
Creech.

Give but the word, we'll snatch this damsel up,
And *bear* her *off.* *Addison. Cato.*

My soul grows desperate.
I'll *bear* her *off.* *A. Philips.*

To bear out. To support; to maintain; to defend.

I hope your warrant will *bear out* the deed.
Shakspeare.

I can once or twice a quarter *bear out* a knave against an honest man. *Id.*

Changes are never without danger, unless the prince be able to *bear out* his actions by power.
Sir J. Heyward.

Quoth Sidrophel, I do not doubt,
To find friends that will *bear* me *out.*
Hudibras.

Company only can *bear* a man *out* in an ill thing.
South.

I doubted whether that occasion could *bear* me *out* in the confidence of giving your ladyship any farther trouble. *Temple.*

To bear a brain. To exert attention. Ingenuity or memory.

My lord and you were then at Mantua:
Nay, I do *bear a brain.*
Shakspeare Romeo and Juliet.

But, still, take you heed, have a vigilant eye—
Well, sir, let me alone, I'll *bear a brain.*
All Fools, Old Play, iv. 177.

To bear six and six. An obscure phrase, occurring in the Spanish Curate of Beaumont and Fletcher.

He's the most arrant beast.
MELL. He may be more beast.
JAM. Let him *bear six and six* that all may blaze
him. *Span. Cur.* ii. 3.

That the object is to make him a horned beast is plain from the context, but by what allusion is not so clear. He is to *bear six and six*, as his arms. After one or two unsatisfactory conjectures, it was suggested to me that the expression most probably alluded to the horns of a ram, which by the aid of a little fancy may be considered as two figures of six, placed back to back 9 6. That this is the true interpretation there seems no reason to doubt. *Nares. Glossary*.

BEARING-CLOTH. The mantle or cloth with which a child is usually covered when carried to church to be baptised, or produced among the gossips by the nurse.

Here's a sight for thee; look there, a *bearing-cloth* for a squire's child; look thee here, take up, take up boy; open't. *Shakspeare.*

BEAR',
BEAR'BAITING,
BEAR'GARDEN,
BEAR'HERD,
BEAR'ISH,
BEAR'SLEEK,
BEAR'LIKE,
BEAR'SKIN,
BEAR'WARD,
BEAR'WHELP.

Sax. beꞃa, Germ. *baer*, Lat. *ursus*. Others derive it from the Greek βειρος, which they interpret *pilosum villosum (ursus, quasi harsus, hirsutus, pilis horrens.)* A hairy shaggy animal, a she bear, shaggy, and of horrid aspect.

Some have falsely reported, that *bears* bring their young into the world shapeless, and that their dams lick them into form. *Calmet.*

A cruel *beare*, the which an infant bore
Betwixt his bloodie jawes besprinkled all with gore.
Spenser.

I would I had bestowed that time on the tongues, that I have in fencing, dancing, and *bear-baiting*. O, had I but followed the arts.
Shakspeare. Twelfth Night.

They have tied me to a stake I cannot fly,
But *bear-like* I must fight the course. *Id. Macbeth.*

Virtue is of so little regard in these costermonger times, that true valour is turned *bear-herd*.
Id. Henry IV.

Like to a chaos, or an unlick'd *bear-whelp*,
That carries no impression like the dam. *Id. Hen. VI.*
Call hither to the stake my two brave *bears*,
Bid Salisbury and Warwick come to me.——
—Are these thy *bears*; we'll bait thy *bears* to death.
And manacle the *bearward* in their chains. *Id.*
Thou'dst shun a *bear*;
But if thy flight lay tow'rd the raging sea,
Thou'dst meet the *bear* i' th' mouth. *Id.*
COR. O, by your leave, sir,
I must be bold to raise you; else your physic
Will turn to futher sickness.
MEL. ——— Physic, *bear-leech?*
COR. Yes; physic! You are mad. *Ford.*
The worsted *bear* came off with store
Of bloody wounds, but all before:
For as Achilles dipt in pond,
Was anabaptiz'd, free from wound,
Made proof against dead-doing steel
All over but the pagan heel—
So did our champion's arms defend
All of him but the latter end. *Butler's Hudibras.*

His surcoat was a *bearskin* on his back. *Dryden.*

In our own language we seem to allude to this degeneracy of human nature, when we call men, by way of reproach, sheepish, *bearish*, &c. *Hume.*

I must propose some methods for the improvement of the *bear-garden*, by dismissing all the bodily [illegible] to that quarter. *Spectator.*

Our nobility also kept their *bear-ward*. *Pennant.*

BEAR, the name of two constellations, called the *greater* and *lesser bear*; in the tail of the *lesser bear* is the pole star.

The chiding billow seems to pelt the clouds,
The wind-shak'd surge with high and monstrous
main,
Seems to cast waters on the burning *bear*,
And quench the guards of the ever fixed pole.
I never did like molestation view
On the enchafed flood. *Shakspea*
Others derive it from the *bear*
That's fixed in northern hemisphere,
And round about his pole does make
A circle like a *bear* at stake,
That at the chain's and wheels about
And overturns the rabble rout. *Butler's Hudibr*
E'en then when Troy was by the Greeks o'erthrow
The bear oppos'd to bright Orion shone. *Cow*

BEAR, in astronomy. See URSA.

BEAR, in zoology. See URSUS.

BEAR, in heraldry; this animal occurs as charge in coats of arms, as, 'He beareth, or, bear passant, *sable*; by the name of Fitzourse and rampant, as in fig. 1.

Fig. 1.

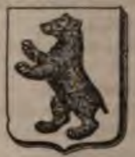
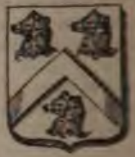


Fig. 2.



Bears' heads are also borne in coat armo mostly erased, as in fig. 2. '*Argent*, a chevr between three bears' heads erased, *sable*, muzzle *or*; by the name of Pennarth.'

BEAR, ORDER OF THE, was a military order Switzerland, erected by the emperor Frederic in 1213, by way of acknowledgment for the s vice the Swiss had done him, and in favor of t abbey of St. Gall. To the collar of the ord hung a medal, on which was represented a be raised on an eminence of earth.

BEAR, SEA. See PHOCA.

BEAR ISLAND, an island in Bantry bay, Irela six miles in length, and one and a half bro hilly and rugged, where batteries have be erected for the defence of the bay. Dista twelve miles from Bantry. Long. 9° 45′ W., l 51° 35′ N.

BEAR ISLAND, a small island in the Atlant on the coast of Main. Long. 68° 20′ W., l 44° 6′ N.

BEAR LAKE, BLACK, a lake of North Ameri in long. 107½ W., lat. 53½ N. The navigatio full of impediments from islands and rapids.

BEAR LAKE, GREAT, a considerable lake in t north-west of America, near the arctic ci The North-west Expedition reached it in t summer of 1820, and lieutenant Franklin and

wintereo nere. In the ensuing spring they
ted to reach the ocean by the Copper-
iver; but, unable to accomplish their ob-
ey returned to this lake the same year in
istress, and passed a second winter in the
ourhood.

r Town, in Carolina county, Maryland,
out seven miles north from Greensburgh,
out fifteen miles south-east from Chester-

r's Breech, in botany. See Acanthus.

r's College, a jocular expression for
r-garden, commonly called Paris garden.

m the diet and the knowledge
the students in *bears' college*.
Ben Jonson. Mask of Gips.

r's Ear, in botany, a name sometimes
o the primula villosa, or auricula; also to
ifraga sarmentosa, or Chinese saxifrage.

r's Foot, a name given to the nelleborus
.

r's Flesh was much esteemed by the
s: even at this day the paw of a bear,
and smoked, is served up at the table of
.

r's Grease was formerly esteemed a
gn remedy against cold disorders, es-
y rheumatisms. It is now much used in
g ladies and gentlemen's hair.

r's Skin affords a fur in great esteem, and
ch depends a considerable article of com-
being used in housings, on coach-boxes,
n some countries clothes are made of it,
especially bags wherein to keep the feet
in severe colds. Of the skins of bears'
re made gloves, muffs, and the like.

Bear a Body. A color is said to bear a
n painting, when it is capable of being
so fine, and mixing with the oil so en-
as to seem only a very thick oil of the same

ARD, *v.* & *n.*
RDED,
RD'LESS.
The applications of this word are better understood than its etymology;
ll obvious meaning of it is the hair that
on the lips and chin. It is supposed to
ived from the German baren, to show or
st, because the beard is an indication of
od: but this is not to my mind satisfac-
its metaphorical application is to the sharp
s growing on the ears of corn; to the
f an arrow; it also describes the hairy
at grows from the chin of some animals;
rd of a horse is that part which bears the
f the bridle; the length of the beard marks
o *beard* also is to take or pluck by the
n contempt or anger; to oppose to the
to set at open defiance; adopted, accord-
Mr. Stevens, from romance; in the old
ge of which it signified, *to cut off the beard;*
ss, without a *beard;* a boy.

erchant was there with a forked *berd.*
Chaucer. Prologue to the Canterbury Tales.

Franklein was in this compagnie
hite was his *berd* as is the dayesie. *Id.*

berd as any sowe or fox was rede,
thereto brode as though it were a spade.

Upon the cop right of his nose he hade
A wert, and thereon stode a tuft of heres,
Rede as the bristles of a sowes eres. *Id.*

Art thou the caytive that defyest me,
And for this mayd, whose party thou dost take?
Wilt give thy *beard*, though it but little be?
Yet shall it not her lockes for raunsome fro me
free. *Spenser.*

He that hath a *beard* is more than a youth; and he that hath no *beard* is less than a man. *Shakspeare.*

shall a *beardless* boy,
A cocker'd silken wanton, brave our fields,
And flesh his spirit in a warlike soil,
Mocking the air with colours idly spread,
And find no check. *Id.*
No man so potent breathes upon the ground,
But I will *beard* him. *Id.*

——— and began to hem him round
With ported spears, as thick as when a field
Of Ceres ripe for harvest waving bends
Her *bearded* grove of ears, which way the wind
Sways them. *Milton.*

Ere on thy chin the springing beard began,
To spread a doubtful down, and promise man.
Prior.

Some thin remains of chastity appear'd,
Ev'n under Jove, but Jove without a *beard.*
Dryden.

Would it not be insufferable for a professor to have his authority, of forty years standing, confirmed by general tradition and a reverend *beard*, overturned by an upstart novelist? *Locke.*

Paints, d'ye say?
Why she lays it on with a trowel—Then she has a great *beard*, that bristles through it, and makes her look as if she were plastered with lime and hair.
Congreve. Double Dealer.

The *beard*, conformable to the notion of my friend Sir Roger, was for many ages looked upon as the type of wisdom. Lucian more than once rallies the philosophers of his time, who endeavoured to rival one another in *beards*; and represents a learned man who stood for a professorship in philosophy, as unqualified for it by the shortness of his *beard*. *Spectator.*

Girt with many a baron bold,
Sublime their starry fronts they rear;
And gorgeous dames, and statesmen old
In *bearded* majesty, appear. *Gray.*

The artificial part of a feather is the *beard*, or as it is sometimes I believe called, the vane. By the *beards* are meant, what are fastened on each side of the stem, and what constitute the breadth of the feather; what we usually strip off from one side or both when we make a pen.
Paleys Natural Theology.

But if thy *beard* had manlier length,
And if thy hand had skill and strength,
I'd joy to see thee break a lance,
Albeit against my own perchance.
Byron. Bride of Abydos.

I should have *bearded* him in halls of pride,
I should have mated him in fields of death;
Not stolen upon his secret bower of peace,
And breathed a serpent's venom on his flower.
Maturin's Bertram.

Beards. 'Neither errors nor beards,' as archbishop Tillotson says, 'are inconveniences lately sprung up in the world.' As the distinguishing sign of mature manhood, the beard has in all ages commanded attention, and received particular veneration from the less civilised part of mankind. But Moses is the earliest legislator on the subject. The command which God gave by him to the Israelites, 'Thou shalt not mar the corners of thy beard' (Lev. 19, 27.), seems clearly to allude to some previous well-known custom, probably of the Egyptians. Maimonides, as quoted by Whitby, describes the 'five corners' of the beard, 'none of which,' says he, 'much less all, they might shave off, as the manner of the idolatrous priests was.' More Nevoch, c. xxxvii. Herodotus confirms this with regard to the Egyptian priests, who, as he tells us, shaved the head, chin, and whole body. Accordingly, most of the Egyptian figures are without beard. He further informs us, that in time of calamity, they suffered their beard and hair to grow. The Jews also, in time of mourning, neglected to trim their beards, that is, to cut off what grew superfluous on the upper lips and cheeks. But occasionally manifested their grief in great afflictions by plucking off the hair of their beard. The veneration of the Jews for this appendage of manhood, in the brightest period of their history, is strongly exemplified in the indignation which was felt by the ambassadors of David, when they were outraged in this respect by Hanun the Ammonite, 2 Sam. x. 'The men,' it is said, 'were greatly ashamed,' and 'the children of Ammon stank before David.' We were lately much amused with the argument of a learned modern Jew for the obligation of wearing his beard: 'two of the strongest implications,' he said, 'of the laws of his people required it; the above command, Lev. xix. 27, not to mar its corners, which he contended could only apply when the beard was worn; and the general precept, Deut. xxii. 5, forbidding either sex to wear that which 'pertaineth' to the other—a beardless face being, according to nature, he insisted, a woman's face.'

The Assyrians, says Strabo, xvi., like the Egyptians, permitted their beards to grow in seasons of grief. The Persians, on the contrary, shaved not only themselves in honor of the dead, but docked the tails, and cropped the manes, of their horses and mules. Compare Her. ix. 24, Il. κ. 45.

According to the fables of the Greeks, when Thetis wished to revenge the wrongs of her son, she approached the knees of Jupiter with a kiss, and touched his beard in supplication. In the same manner Dolon would have besought pity from Diomede; and if he could have touched the warrior's beard, his life, perhaps, would have been secure. *Il.* κ. 454.

Athenæus observes that the Greeks always wore their beards till the time of Alexander; and that the first who cut it at Athens ever after bore the addition of κορσης, shaven, on medals. He records a sarcasm of Diogenes, who asked a smooth chined voluptuary 'whether he quarrelled with nature for making him a man instead of a woman?' xiii. 2. Plutarch states that Alexander commanded the Macedonians to be shaven, lest the length of their beards should give a handle to their enemies. But his father, as well as Amyntas and Archelaus, his predecessors, are represented on medals without beards. The Greek philosophers distinguished themselves from the vulgar by their long beards: the custom, however, was not invariable; for the scholiast of Aristophanes, Nub. 120, asserts that the ancient philosophers shaved their beards. The Greeks continued to shave till the time of Justinian, under whose empire long beards came again into fashion, and so continued till Constantinople was taken by the Turks. The Roman philosophers affected to preserve the distinctive character of the mantle and long beard. Horace describes them:

> ———— 'Tempore quo me
> Solatus jussit sapientem pascere barbam.'
> *Sermon*, l. ii. sat. iii. v. 35,

and Aulus Gellius and Lucian express themselves in a similar manner. Persius seems to have been so convinced of the beard's being the symbol of wisdom, that he thought he could not bestow a greater encomium on Socrates than calling him 'Magistrum barbatum.'

From the building of the city, till the year of its foundation 454, barbers are said to have been unknown at Rome. They were first imported from Sicily by Publius Licinius. There is some contradiction however on this point among the ancient writers. Pliny, vii. 59, Aulus Gellius, iii. 4., and Varro, de Re Rust. ii. 2., concur in the foregoing statement. Livy, on the contrary, among the other signs of popular mourning, after the execution of Manlius Capitolinus, which took place in the year U.C. 369, enumerates the letting the beard grow, which, unless shaving had been customary, could not have been noticed. Scipio Africanus is said to have been the first daily shaver at Rome. Slaves wore their beards and hair long; but, when manumitted, shaved their heads in the temple of Feronia, and put on a cap, or 'pileus,' as a badge of liberty. Those who escaped from shipwreck, shaved their heads; and persons acquitted of a capital crime, cut their hair and shaved, and went to the capitol to return thanks to Jupiter. The Roman emperors shaved till the time of Adrian, who retained the mode of wearing the beard, as Plutarch tells us, to hide the scars in his face.

According to Suetonius, Calig. 10., the young Romans were first shaved when the toga virilis was assumed. Macrobius, Somn. Scip. i. 6, says it was about the age of twenty-one. Augustus did not shave before the age of twenty-five. Young men with a long down, or 'lanugo,' upon the chin, were called 'juvenes barbatuli,' or 'benè barbati.' The day on which they first shaved, among the Greeks and Romans, was a festival; visits of ceremony were paid them; and they received presents from their friends, as Juvenal, Sat. iii. 186,

> 'Ille metit barbam, crinem hic deponit amati:
> Plena domus libis genialibus.'

The first growth of the beard being consecrated to some god, usually to the Lares. Nero consecrated his in a golden box, set with pearls, to Jupiter Capitolinus.

Persons of respectability had their children shaved the first time by others of the same, or greater quality, who by this means became godfathers, or adoptive fathers, of the children: a custom which was handed down to Rome Christian, in which a person became godfather of a child by barely touching his beard: thus historians relate, that one of the articles of the treaty between Alaric and Clovis was, that Alaric should touch the beard of Clovis, and become his godfather. This was also an ancient form of tokens on oath, Aumoin, lib. iv.

Ecclesiastical discipline has varied much on the article of beards: sometimes they have been enjoined on the clergy from a notion of too much effeminacy in shaving, and that a long beard was more suitable to the ecclesiastic gravity; at other times they are forbidden, from the supposed danger of pride lurking beneath a venerable beard. The Greek and Romish churches long disputed on this important matter. Since the time of their separation, the Romanists seem to have given more into the practice of shaving, by way of opposition to the Greeks; and have even made some express constitutions 'de radendis barbis.' The Greeks, on the contrary, espouse very zealously the cause of long beards, and are extremely scandalised at the beardless images of saints in the Roman churches: There are still extant prayers used in the latter on the solemnity of consecrating the beard to God, when an ecclesiastic was shaven.

The barbarous nations of Europe appear very generally to have shaved, some of them reserving the mustachios. When the Franks made themselves masters of Gaul, and assumed the authority of the Romans; the bondsmen were expressly ordered to shave their chins; a law which continued in force until the entire abolishment of servitude in France. So likewise, in the time of the first race of their kings, a long beard was a sign of nobility and freedom. Princes were emulous of having the largest beard; Eginhard, secretary to Charlemagne, speaking of the last kings of the first race, says, they came to the assemblies in the Champ de Mars in a carriage drawn by oxen, and sat on the throne with their hair dishevelled, and a very long beard, crine profuso, barba submissa, solio residerent, et speciem dominantis effingerent. To touch any one's beard, or cut off a bit of it, was, among the first French, the most sacred pledge of protection and confidence. For a long time all letters that came from the sovereign had, for greater sanction, three hairs of his beard in the seal. There was long in being a charter of 1211, which concludes with the following words: Quod ut ratum et stabile perseveret in posterum, præsentis scripto sigilli mei robur apposui cum tribus pilis barbæ meæ. In the tenth century Robert of France, the famous rival of Charles the Simple, that it might be the more conspicuous to his soldiers when he was in the field, used to let his long white beard hang down on the outside of his cuirass. French historians describe the beard of Henry IV., deservedly styled the Great, as diffusing over the countenance of that prince a high degree of amiable openness, and majestic sweetness. By the premature death of that prince, the beard, hitherto so highly respected, experienced a sudden and fatal revolution. Louis XIII. mounted the throne of his father without one. Every one concluded immediately, that the courtiers, seeing their young king with a smooth chin, would look upon their own as too rough. The conjecture proved right; for they presently reduced their beards to simple whiskers, and a small tuft of hair under the nether lip. The people at first would not follow this dangerous example, and the duke of Sully never would adopt it. He kept his long beard, and appeared with it at court, and observing himself ridiculed by the young, said to the king, 'Sir, when your father, of glorious memory, did me the honor to consult me on his great and important affairs, the first thing he did was to send away all the buffoons and stage-dancers of his court.' Whiskers now attained their highest degree of favor, at the expense of expiring beards. A fine black whisker, elegantly turned up, was a very powerful mark of dignity with the fair sex, and it was no uncommon thing for a favorite lover to have his whiskers turned up combed, and pomatumed, by his mistress; for this purpose, a man of fashion took care to be always provided with every little necessary article, especially whisker wax. Whiskers were still in fashion in the beginning of Louis XIV's reign. That prince, and all the great men of his reign took a pride in wearing them. They were the ornament of Turenne, Condé, Colbert, Corneille, Moliere, &c. But they now underwent several changes both in form and name: there were Spanish, Turkish, guard dagger, royal whiskers, &c., until their smallness proclaimed their approaching departure. In English history we have no such copious details on this mighty subject. Although the ancient Britons are supposed to have shaved all but the upper lip, Edward the confessor is represented, on his great seal, with a large beard and mustachios. When spies, according to William of Malmesbury, were sent by Harold into the camp of William I. they returned with an assurance of victory, since their enemies were priests, they said, and not soldiers, being all shaven. William the conqueror, on his seal, appears with a short beard and mustachios. Among the edicts which he imposed upon the English, few were considered more oppressive than that which enjoined the practice of shaving. Like a similar edict of Peter I. of Russia, it was perpetually disobeyed, and the hatred of it led in many cases to open insurrection. The Romish clergy, it seems, assumed the right to legislate for princes on this topic among others. The beard of Henry I. was loudly condemned by them; Orderic Vitalis and Serlo both denounced it from the pulpit. The king, to avoid these fulminations, shaved the offending part; yet within twenty years we again find it on the effigy of Henry II. on his seal. In the reign of Henry VIII. it is well known, Sir Thomas More exhibited on the block this memorable ornament: and perceiving it was likely to be cut by the axe of the executioner; took it away, saying, my beard has not been guilty of treason: it would be an injustice to punish it. In Shakspeare we read of 'your straw-colored beard, your orange-tawny beard, your purple in-grain beard, and your perfect yellow.' Bottom's Histrionic Company are instructed to have 'good strings to their beards;' an advice which has escaped explanation. 'A beard of the General's cut' is noticed in Henry V. 'A great round beard' is disapproved of in The Merry Wives of Windsor, and compared to 'a glover's paring knife.' Charles I. wore mustachios and a short peaked beard: Charles II. mustachios alone: since the Revolution, except among our modern soldiery, the face has been entirely smooth:—The Spaniards have a proverb, which perhaps suggested the new fashion in the Hussar regiment. Desde que no hay barba, no hay mas alma. 'Since we have lost our beards, we have lost our souls.' Among the European nations that have been most curious in beards and whiskers, none have been more distinguished than Spain.

We cannot pursue the details of this subject much farther. The Portuguese, whose national character is similar to that of the Spaniards, have imitated them in this respect. We read, that in the reign of Catherine queen of Portugal, when John de Castro had taken the castle of Diu, in India, he was under the necessity of borrowing from the inhabitants of Goa a thousand pistoles for the maintenance of his fleet; and that, as a security for the loan, he sent them one of his whiskers, telling them 'all the gold in the world cannot equal the value of this national ornament of my valor; and I deposit it in your hands as a security for the money.' The inhabitants of Goa, it is said, generously returned both the money and his whisker. Le Comte observes, that the Chinese affect long beards extravagantly; but nature has baulked them, and only given them very little ones, which, however, they cultivate with infinite care; the Europeans are strangely envied by them on this account. Among the Turks it is more infamous for any one to have his beard cut off, than among us to be publicly whipt or branded with a hot iron. There are many people in that country, who would prefer death to this kind of punishment. The Arabs make the preservation of their beards a capital point of religion, because Mahomet never cut his. Hence the razor is never drawn over the Grand Seignior's face. The Persians, who clip them, and shave above the jaw, are reputed heretics. It is likewise a mark of authority and liberty among them, as well as among the Turks. They who serve in the seraglio, have their beards shaven as a sign of their servitude. They do not suffer it to grow till the sultan as a reward has set them at liberty.

Of that singular variety of our race, bearded women, many marvellous stories are told. Herodotus speaks of a people above Halicarnassus, the Pedasenes, amongst whom the chin of the priestess of Minerva regularly budded with a large beard, when any great public calamity impended. Her. i. 175. Hippocrates tells us of two bearded women of respectability, Phaetusa of Abdera, the wife of Pythias, and Hamysia of Thasos, the wife of Gorgippus. Generally, where this peculiarity has occurred, the menses have totally ceased. Eusebius Nieurembergius mentions a woman, who had a beard reaching to her navel; and Bartholin speaks of a bearded woman well known at Copenhagen. Whether it convinced his imperial majesty that beards no longer distinguished men, and therefore produced his decree against them, we are not told; but a woman is said to have been taken in 1724, by the Prussian army in the battle of Pultowa, and carried to Petersburg, where she was presented to the Czar, Peter I. whose beard measured a yard and a half. We read in the Trevoux Dictionary, that there was a woman seen at Paris, who had not only a bushy beard on her face, but her body likewise covered all over with hair. The great Margaret, the governess of the Netherlands, is said also to have had a very long stiff beard, on which she prided herself; and preserved it with the greatest care. In the nursery of Albert, Duke of Bavaria, in the time of Wolfius, there was reported to be a virgin with a large black beard; but these good ladies, young or old, have been singularly rare in modern times, and in all well-authenticated history.

Beards, in entomology, are two small, oblong, fleshy bodies, placed just above the trunk, as in the gnats, and in the moths and butterflies.

Beards of Comets. See Comet.

Beards of Horses. The part underneath the lower mandible, on the outside and above the chin, which bears the curb, is called the beard or chuck. It should have but little flesh upon it, without any chops, hardness, or swelling; and be neither too high raised nor too flat, but such as the curb may rest in its right place.

Beards of Muscles, Oysters, &c. denote assemblages of threads or hairs, by which those animals fasten themselves to stones. The hairs of this beard terminate in a flat spongy substance, which being applied to the surface of a stone, sticks thereto, like the wet leather used by boys in what they call a sucker.

Beard (John), an English actor and singer, was brought up a sizer in the king's chapel. In 1737 he made his first appearance on the stage, at Drury-lane, in the character of Sir John Loverule, in the Devil to Pay. About two years after he married lady Henrietta Herbert, daughter of the earl of Waldegrave, and widow of lord Edward Herbert; but this connexion brought him little fortune, and though he gave up the stage, for some time, he returned again to it, until 1758, when he joined with Mr. Rich, whose daughter he had married on the death of his former wife. He died in 1763, aged seventy-four.

Bearded Brothers, fratres barbati, are particularly used in ecclesiastical writers for those otherwise called fratres conversi in the order of Grammont and of the Cistercians. They took this denomination because they were allowed to wear their beards, contrary to the rules of the professed monks.

Bearded Husk, among florists, a husk which is hairy on the edges, as that of the rose, &c.

Bearded Venus. The Romans paid their devotions to a bearded Venus, Veneri barbatæ, supposed to have been of both sexes. A statue of her was found in the Isle of Cyprus.

Bearers, at funerals, is applied to the supporters of the pall. The ancients had peculiar orders or officers of bearers, called by the Greeks κοπεατοι; by the Romans, lecticarii. The vespillones, or bajuli, were a lower sort of bearers appointed for persons of inferior rank.

Bearers, gestantes, in writers of the middle age, are sometimes used for a child's gossips

se they hold the infant in their arms, and
nt him to the priest in the ceremony of
m.

ARERS, in heraldry, or supporters, are cer-
igures, standing on the scroll, and placed
e side of an escutcheon, which they seem
r up. They are, chiefly, figures of beasts:
s of human creatures, used for the like pur-
are more properly called tenants. Some
another difference between tenant and
, or supporter: when the shield is borne
ingle animal, it is called tenant; when by
hey are called bearers, or supporters. The
s of things inanimate, sometimes placed
of escutcheons, but not touching, or seeming
r them, though sometimes called bearers,
ore properly called cotises. Bearers have
rly been taken from such animals as were
in the shields; and sometimes they have
chosen as bearing some allusion to the
of those whose arms they are made to
rt. F. Menestrier traces their origin to the
t tournaments, in which the knights caused
shields to be carried by servants or pages
the disguise of lions, bears, griffins, black-
s, &c. who also held and guarded the
heons, which the knights were obliged to
e to public view some time before the lists
opened. But Sir G. Mackenzie says, that
st origin and use of them are derived from
stom of leading such as are invested with
eat honor to the prince who confers it, and
being supported by two of the quality
he receives the symbols of such honor:
a remembrance of that solemnity, his arms
fterwards supported by any two creatures
he might choose. See SUPPORTERS.

ARERS, in horticulture, denote the fruit
hes, or such as bear fruit. The bearers, or
g branches of an apple-tree, and the like,
und to be rougher, and fuller of asperities
r bark, than the other branches.

ARERS OF A BILL OF EXCHANGE, denote
rsons in whose hands it is, and in favor of
the last order or indorsement was made.
a bill, or order for money, is said to be
le to bearer, it is understood to be payable
who first offers himself after it becomes
To be paid a bill or order of this kind,
needs neither indorsement nor transfer; yet
roper to know to whom it is paid.

ARING, in heraldry, a term used to express
t of arms, or the figures of armories, by
the nobility and gentry are distinguished
the other ranks of the people, and from one
er. These signs of nobility with us are
tly a copy of the statues and images among
cient Romans, which they used to expose
their houses on public days, and carried
the body at the funeral of a great person.
statues among them bore the resemblances
ir noble ancestors. And as our coats of
evidently were brought in the place of them,
y date the origin of heraldry in England,
practised, from the time of the subversion
Roman empire by the Goths and Vandals;
s they destroyed many liberal arts, so they
in return, to have given birth to the science
aldry; for which their posterity, it must
be confessed, are under few obligations. These warlike nations, having subdued the Roman empire and raised their glory by military service, became fond of the achievements of their ancestors and great men, and derived their ensigns and titles of honor from what concerned a soldier. They first distinguished the whole community into three ranks, which they named according to the different orders of military, miles, eques, and scutifer; and their posterity, willing to commemorate their honors, reserved to themselves their military ensigns, and these became what we call bearings, or arms, the marks of gentility or of families, some one of which had once deserved an elevation above the common rank of men. While the direct descendant of this honorable person carried his ensigns of honor for his distinction, the collateral branches also were ambitious of preserving the memory of their having belonged to such an honorable house; and therefore assumed the same figure, but with some difference, to distinguish the distance from the original claim. In process of time, other families, who had deserved as well of their prince and country, whether in civil or military affairs, became desirous of the same sort of distinction, by way of perpetual memorial of their services; and upon this occasion many other devices were formed into arms, and continued down to posterity in their several families. Armorial bearings, in the tenth and eleventh centuries, were single and plain, consisting only of few figures. Charges, differences, quarterings, &c. are the inventions of later times. See HERALDRY.

BEARING, in navigation, an arch of the horizon intercepted between the nearest meridian and any distant object, either discovered by the eye, or resulting from the sinical proposition; as in the first case, at four P. M. Cape Spado, in the isle of Candia, bore south by west by the compass. In the second, the longitudes and latitudes of any two places being given, and consequently the difference of latitude and longitude between them, the bearing from one to the other is discovered by the following analogy:—As the meridional difference of latitude is to the difference of longitude, so is radius to the tangent bearing. Bearing is also the situation of any distant object, estimated from some part of the ship according to her position. In this sense, an object so discovered must be either a-head, a-stern, a-breast, on the bow, or on the quarter. These bearings, therefore, which may be called mechanical, are on the beam, before the beam, abaft the beam, on the bow, on the quarter, a-head, or a-stern. If the ship sails with a side wind it alters the names of such bearings in some measure, since a distant object on the beam is then said to be to leeward or to windward; on the lee-quarter or bow, and on the weather-quarter or bow.

BEARING, in sea language. When a ship sails towards the shore, before the wind, she is said to bear in with the land or harbour. To let the ship sail more before the wind, is to bear up. To put her right before the wind, is to bear round. A ship that keeps off from the land is said to bear off. When a ship that was to windward comes under a ship's stern, and so gives her the wind, she is said to bear under her lee, &c. There is another sense of this word, in reference to the burden of a ship; for they say a ship bears, when, having too slender or lean a quarter, she will sink too deep into the water with an overlight freight, and thereby can carry but a small quantity of goods.

Bearing away (as well as Bearing up) is improperly used to denote the act of changing the course of a ship, in order to make her sail before the wind, after she had sailed some time with a side-wind, or close-hauled.

Bearing of an Arch, or Vault, denotes the effort which the stones make to separate by their gravity the piers or piedroits. This amounts to the same with what the French call poussée. See Poussee.

Bearing of an Organ Pipe denotes an error or variation from the just sound it ought to yield.

Bearing of a Stag, in hunting, is used in respect of the state of his head, or the croches which he bears on his horns. If one is asked what a stag bears, he has only to reckon the croches, but never to express an odd number; as, if he had four croches on his near horn, and five on his far, a huntsman will say he bears ten, a false right on his near horn; if but four on the near horn, and six on the far horn, he will say he bears twelve, a double false right on the near horn.

Bearing off is used by seaman, generally in business belonging to shipping, for thrusting off. Thus in hoisting any thing into the ship, if it has caught hold of any part of the ship, or become any way entangled, they say, bear it off from the ship's side. So if they would have the breech or mouth of a piece of ordnance, &c. put from them, they say, bear off, or bear about the breech.

Bearing sail well is said of a ship, when she is a stiff-guided ship, and will not couch down on a side with a great deal of sail. When a ship is said to bear out her ordnance, it is meant, that her ordnance lies so high, and she will go so upright, that in reasonable fighting weather, she will be able to keep out her lower tier, and not be forced to shut in her ports. The ship is said to overbear another, when it is able, in a great gale of wind, to carry out more sails, viz. a top sail more or the like.

BEARN, a ci-devant province of France bounded on the east by Bigorre, on the south by the mountains of Arragon, on the west by Soule and part of Navarre, and on the north by Gascony, and Armagnac. It had the title of Vicomté as early as the ninth century. It was afterwards raised to a principality, and belonged, with Navarre, to Henry IV. when he came to the crown. His son, Louis XIII, united it, with that part of Navarre which was possessed by the house of Albret, to France, in 1620. It now forms with Basques, the department of the lower Pyrenees, and is about sixteen leagues in length, and twelve in breadth. In general it is barren, yet the plains yield considerable quantities of flax, and Indian corn. It is also rich in mines of iron, copper, and lead, and has 220,000 inhabitants. The capital is Pau. See Pyranees.

Bearn, a city and canton of Switzerla
See Bern.

BEAST,
Be'astlike,
Be'astliness,
Be'astly,
Be'astlihood,
Be'astings.
} *Beste*, Fr. *bestia*, La
an animal distinguished fr
birds, insects, fishes, a
man; an irrational creatur
or a brutal savage man, w
practises any thing contra
to the decencies of life and the dictates of h
manity.

If that the good man, that the *bestes* oweth,
Wol every weke, er that the cock him croweth
Fasting ydrinken of this well a draught,
As thilke holy Jew our eldre taught,
His *bestes* and his store shall multiplie.
Chaucer. Pardoneres T

A *beestli* man parseyueth not tho thingis that b
of the spyrit of God, for it is foli to him.
Wickliff. 1 Cor. chap.

They held this land, and with their filthiness
Polluted this same gentle soil long time;
That their own mother loath'd their *beastliness*,
And 'gan abhor her brood's unkindly crime.
Spenser. Faerie Que

And all wylde *beasts*, made vassals of his pleasure
And with their spoyles enlarged his private treasur
Id. Mother Hubbard's Ta

Not that I being a *beast*, she would have m
but that she, being a very *beastly* creature, lays th
to me. *Shakspea*

With lewd, profane, and *beastly* phrase,
To catch the world's loose laughter or vain gaze.
Ben Jons

So may we see a little lionet,
When newly whelpt, a weak and tender thing,
Despis'd by ev'ry *beast*; but waxen great,
When fuller times full strength and courage bring
The *beasts* all crouchen low, their king adore,
And dare not see what they contemn'd before;
The trembling forest quakes at his affrighted ear
Fletcher. Purple Isla

The sixth, and of creation last, arose
With evening harps and matin, when God said,
Let th' earth bring forth soul living in her kind,
Cattle and creeping things, and *beasts* of th' earth
Each in their kind. *Milt*

Here sat she by these musked eglantines;
The happy flowers seem yet the print to bear:
Her voice did sweeten here thy sugar'd lines
To which winds, trees, *beasts*, birds, did lend an e
Drummo

Heaven's king
Keeps register of every thing:
And nothing may we use in vain,
Ev'n *beasts* must be with justice slain
Marvell. Wounded Fa

Beast of a bird! supinely when he might
Lie snug and sleep, to rise before the light!
What if his dull forefathers us'd that cry,
Could he not let a bad example die. *Dryd*

Medea's charms were there, Circean feasts
With bowls that turn'd enamour'd youths to be

It is charged upon the gentlemen of the ar
that the *beastly* vice of drinking to excess hath b
lately, from their example, restored among us. *Sw*

Man cares for all! to birds he gives his woods,
To *beasts* his pastures, and to fish his floods. *Po*

O ye woods, spread your branches apace,
To your deepest recesses I fly;
I would hide with the *beasts* of the chase,
I would vanish from every eye.
Shenstone. Paste

Inspiring dumb
And helpless victims with a sense so keen
Of injury, with such knowledge of their strength,
And such sagacity to take revenge,
That oft the *beast* has seem'd to judge the man.
Cowper. Task. b. vi.

Beast, among gamesters, a game at cards, played in this manner: the best cards are the king, queen, &c. whereof they make three heaps, the king, the play, the troilet. Three, four, or five may play, and to every one is dealt five cards. But before the play begins, every one stakes to the three heaps. He that wins most tricks, takes up the heap called the play: he that has the king, takes up the heap so called: and he that has three of any sort, that is three fours, three fives, three sixes, &c. takes up the troilet heap.

Beast, at ombre, is when the player, or person that undertakes the game, loses it to the other two, the penalty of which is a forfeiture equal to the stake played for.

BEAT, *v. n.* Be'ater, B'eating. Sax. *beatan*, *beotan*, Germ. *batten*, French, *battre*, to strike, either with gentleness or violence, with or without an instrumental medium; mechanical or animal motion, rising and falling, or terminating on an object, it is used metaphorically, and applied to almost every kind of regular or repeated motion.

To Beat down, is to lessen, to depress, to repel, or to conquer.

To Beat up, is to attack suddenly; to alarm.

To Beat in, is to impress or to inculcate by frequent repetition.

To Beat-about. To try different ways; to search; to hunt for any thing.

And oftentimis I finde that thei metto
With blody strokis, and with wordis grete
Assaying how ther speris weren whette,
And God it wote with many a cruel heto
Gan Troilus upon his helme to *bete:*
But nathelesse Fortune it naught ne would
Of eithers honde that either dyen should.
Chaucer. Troilus and Crescide.

And now the westerne winde bloweth sore,
That now is in his chief soveraingntee
Beating the withered leafe from the tree. *Spenser.*

They've chose a consul that will from them take
Their liberties; make them of no more voice
Than dogs, that are often *beat* for barking.
Shakspeare.

Mistress Ford, good heart, is *beaten* black and blue, that you cannot see a white spot about her. *Id.*

Bid them come forth and hear
Or at their chamber door I'll *beat* the drum,
Till it cry, sleep to death. *Id.*

A turn or two I'll walk,
To still my *beating* mind. *Id.*

The tempest in my mind
Doth from my senses take all feeling else,
Save what *beats* there. *Id.*

It is strange how long some men will lie in wait to speak, and how many other matters they will *beat* over to come near it. *Bacon.*

We are drawn on into a larger speech, by reason of their so great earnestness, who *beat* more and more upon these last alleged words. *Hooker.*

How frequently and fervently doth the scripture *beat upon* this cause! *Hakewell.*

Beyond this flood a frozen continent
Lies dark and wild, *beat* with perpetual storms
Of whirlwind and dire hail. *Milton.*

They lay in that quiet posture, without making the least impression upon the enemy by *beating up* his quarters, which might easily have been done.
Clarendon.

Tho' oft bound to peace
Yet he never would cease
To vex his poor neighbours with quarrels,
And when he was *beat*
He still made his retreat
To his Clevelands, his hells, and his Carwells.
Marvell.

Some have been *beaten* till they know
What wood a cudgel's of by the blow;
Some kick'd until they can feel whether
A shoe be Spanish or neat's leather.
Butler's Hudibras.

He, with a careless *beat*
Struck out the mute creation at a heat. *Dryden.*

Surveys rich moveables with curious eye,
Beats down the price, and threatens still to buy. *Id.*

My temperate pulse does regularly *beat;*
Feel and be satisfied. *Id.*

When from the cave thou risest with the day
To *beat* the woods, and rouse the bounding prey.
Prior.

I am always *beating about* in my thoughts for something that may turn to the benefit of my dear countrymen. *Addison.*

She persuaded him to trust the renegado with the money he had brought over for their ransom; as not questioning but he would *beat down* the terms of it.
Id.

Our warriours propagating the French language, at the same time they are *beating down* their power.
Id.

Such an unlook'd-for storm of ills falls on me,
It *beats down* all my strength. *Id.*

Will fancies he should never have been the man he is, had not he knocked down constables, and *beat up* a lewd woman's quarters, when he he was a young fellow. *Id.*

One sees many hollow spaces worn in the bottoms of the rocks, as they are more or less able to resist the impression of the water that *beats* against them. *Id.*

To find an honest man, I *beat about,*
And love him, court him, praise him, in or out.
Pope.

A man's heart *beats*, and the blood circulates, which it is not in his power, by any thought or volition, to stop. *Locke.*

I would gladly understand the formation of a soul, and see it *beat* the first conscious pulse. *Collier.*

I remember, that once lying a bed, and having been put into a fright, I heard my own heart *beat*, but I took it to be one knocking at the door oftener than once, before I discovered that the sound was in my own heart. *Reid. Enquiry into the Human Mind.*

Beat, in fencing, denotes a blow or stroke given with the sword. There are two kinds of beats; the first performed by the foible of a man's sword, on the foible of his adversary's, which in the schools is commonly called batterie, from the French battre, and is chiefly used in a pursuit, to make an open upon the adversary. The second, and best kind of beat, is performed with the fort of a man's sword upon the foible of his adversary's, not with a spring, as in binding, but with a jerk or dry beat, and is therefore most proper for the parades without or within the sword, because of the rebound a man's sword has thereby from his adversary's, whereby he procures to himself the better and surer opportunity of risposting.

Beat of Drum, in the military art, is differently performed, according to the different purposes intended. Notice is given by it of any sudden danger; or, that scattered soldiers may repair to their arms and quarters: these are called beating an alarm, or to arms. It is also intended to signify, according to the different manners of sounding the drum, that the soldiers are to fall on the enemy: to retreat before, during, or after an attack; to move or march from one place to another: to come out of their quarters, to repair to their colors, &c.

Beats of a watch or clock, are the strokes made by the fangs or pallets of the spindle of the balance, or of the pads in a royal pendulum. To find the beats of the balance in any watch, or in one turn of any wheel:—Having found the number of turns, which the crown wheel makes in one turn of the wheel you seek for; those turns of the crown-wheel, multiplied by its notches, give half the number of beats in that one turn of the wheel: for the balance or swing has two strokes to every tooth of the crown wheel, inasmuch as each of the two pallets has its blow against each tooth of the crown wheel; whence it is, that a pendulum which beats seconds, has in its crown-wheel only thirty teeth. To explain this, suppose the numbers of a sixteen hour watch, wherein the pinion of report is 4, the dial-wheel 32, the great wheel 55, the pinion of the second wheel 5, &c. The number of the notches in the crown-wheel 17, being multiplied into 6336, (the product arising from the continual multiplication of the quotients 8,11,9,8,) gives 107,712, for half the number of beats in one turn of the dial-wheel; for 8 times 17 is 136, which is half the number of beats in one turn of the contrate-wheel 40; and 9 times 136 is 1224, the half beats in one turn of the second wheel; and 11 times 1224 is 13,464, the half-beats in one turn of the great wheel 55; and 8 times 13,464, makes 107,712. Multiply this by the two pallets, i. e. double it, it gives 215,424, which is the number of beats in one turn of the dial wheel, in 12 hours. To know how many beats this watch has in an hour, divide the beats in 12 hours into 12 parts, and it gives 17,952, which is called the train of the watch, or the beats in an hour. If this be divided into 60 parts, it gives 299 and a little more for the beats in a minute, and so you may proceed to seconds or thirds. By the beats and turns of the fusee, the hours that any watch will go may be found, thus: As the beats of the balance in one hour are to the beats in one turn of the fusee, so is the number of the turns of the fusee 1, to the continuance of the watch's going. Thus 20196 : 26028 : : 12 : 16. To find the beats of the balance in one turn of the fusee, say, as the number of turns of the fusee, to the continuance of the watch's going in hours, so are the beats in one hour, to the beats of one turn of the fusee; i. e. 12 : 16 : : 20196 : 26928. To find the beats of the balance in an hour, say, as the hours of the watch's going to the number of turns of the fusee, so are the beats in one turn of the fusee, to the beats of an hour, thus, 16 : 12 : : 26928 : 20196. *Derham's Artificial Clock Maker*, p. 14, &c. and 22. See also Clock-making.

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 ——————
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5)45( 9
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To **Beat an Alarm**, in military affairs, is to give notice by beat of drum of some sudden danger.

To **Beat a Charge**, is to give the signal to fall upon the enemy.

To **Beat the General**, is to give notice to the forces that they are to march.

To **Beat the Reveille**, is to give leave, by beat of drum at day-break, to come out of quarters.

To **Beat the Tattoo** is to give notice to all to retire to their quarters.

To **Beat the Troop** is to give notice to all to repair to their colors.

To **Beat upon the Hand, or to Chack**, in the menage, is spoken of a horse, when his head is not steady, but he tosses up his nose and shakes it all of a sudden, to avoid the subjection of the bridle. Turkish horses are very subject to this fault. When they beat upon the hand neither the best bits, nor the best hand, can fix their heads. Croatian horses are also very apt to beat upon the hand; their bars being too sharp and ridged, so that they cannot bear the pressure of the most gentle bit. It is from this excess of sensibility of the mouth that a horse is apt to chack; but in order to secure his head it is only necessary to put a small flat band of iron, beat arch-ways, under his noseband, which answers as a martingale. This will hinder him to beat upon the hand, but will not break him of the habit; for, as soon as the martingale is taken off, he will fall into the same vice again.

BEATA, Lat. i. e. the blessed, one of the many titles given to the Virgin Mary by the Roman Catholics.

Beater, in manufacturing, is applied to divers sorts of workmen, whose business is to hammer or flatten certain matters, particularly metals. Thus, 1. Gold-beaters are artisans who, by beating gold and silver with a hammer on a marble, in moulds of vellum and bullocks' guts, reduce them to thin leaves, fit for gilding, or silvering of copper, iron, steel, wood &c. Gold-beaters differ from flatters of gold or silver; as the former bring their metal into leaves by the hammer, whereas the latter only flatten it by pressing it through a mill preparatory to beating. 2. Tin-beaters are employed in the looking-glass trade, whose business is to beat tin on large blocks of marble, till it be reduced to thin leaves, fit to be applied with quicksilver behind looking-glasses. See Foliating and Gold-beating.

BEATH, Ang.-Sax. bethian, bathian, to steep, dip, or bathe. In Suffolk and Norfolk, *beathing* or *bathing* wood by the fire, means straitening unseasoned wood by heat; and this is much the same as Spenser's meaning in the example. To bathe or warm in fire so as to harden.—*Todd's Johnson.*

> And in his hand a tall young oake he bore
> Whose knottie snags were sharpen'd all afore,
> And *beath'd* in fire for steele to be instead.
>
> Spenser, *Faerie Queene*

FICAL,
ICALLY,
ICATION,
ICK,
Y,
UDE.

From *beatus*, *beatifico*, to be happy; to make happy with the completion of celestial enjoyment. It is used only of heavenly fruition after death. Bea-
s an acknowledgment made by the
the person beatified is in heaven, and
nay be reverenced as blessed; but is
cession of the honors due to saints,
conferred by canonisation.

ly to behold the face of God, in the ful-
lom, righteousness, and peace, is blessed-
incident unto the creatures beneath man.
Hakewill.

conversion of a sinner there is joy before
spirits, the angels of God, and that is the
on of our pardon and our consignation to
en we may imagine how great an evil it
the spirit of God, who is greater than
Jeremy Taylor.

of this city celestial,
the eternal temple should have rose,
the idea *beatifical*
nd beginning, of each thing that grows.
Giles Fletcher.

the riches of heaven's pavement
divine or holy else, enjoy'd
atifick. *Milton.*

n all the sanctities of heav'n
as stars, and from his sight received
ist utterance. *Id.*

their felicity to have no faith; for enjoy-
ifical vision in the fruition of the object of
have received the full evacuation of it.
Brown's Vulgar Errours.

t the felicity of his heaven, by the delights
ghtly passing over the accomplishment of
d the *beatitude* of that part which earth
ies too weakly affect. *Id.*

know him to be the fullest good, the
s, and the most certain; and consequently
atifying of all others. *Brown.*

contemplate upon the greatness and
of the *beatifick* vision; how a created eye
fortified, as to bear all those glories that
the fountain of uncreated light. *South.*

ient, and the men of practice, are those
t, that shall outgrow all their doubts and
that shall ride upon these clouds, and
r their present imperfections, till persua-
nto knowledge, and knowledge advance
ce, and all come at length to be com-
he *beatifick* vision, and a full fruition of
hich God has in reserve for them, whom
he shall prepare for glory.
South's Sermons.

e image and little representation of hea-
atitude in picture. *Taylor.*

f spiritual conference is unimaginable and
, especially if free and unrestrained, bear-
e of that conversation which is among
beatified saints. *Hammond.*

had the wings of an angel, to have as-
Paradise, and to have beheld the forms
tified spirits from which I might have co-
hangel. *Dryden.*

inst this church stands an hospital erected
ker, who has been *beatified*, though never
Addison.

For you alone his raptures can describe,
And stem the impetuous joys that rise
Within your breasts when all unveil'd you view,
The wonders of the *beatific* sight. *Mrs. Rowe.*

Beatification, in ecclesiastical affairs, an act by which the pope declares a person beatified, or blessed, after his death. It is the first step towards canonisation, or raising any one to the honor and dignity of a saint. No person can be beatified till fifty years after his or her death. All certificates or attestations of virtues and miracles, the necessary qualifications for saintship, are examined by the congregation of rites. This examination often continues for several years; after which his holiness decrees the beatification. The corpse and relics of the future saint are from thenceforth exposed to the veneration of all good Christians; his image is crowned with rays, and a particular office is set apart for him; but his body and relics are not carried in procession. Indulgences likewise, and remissions of sins, are granted on the day of his beatification; which, though not so pompous as that of canonisation, is however very splendid. Beatification differs from canonisation in this, that the pope does not act as a judge in determining the state of the beatified, but only grants a privilege to certain persons to honor him by a particular religious worship, without incurring the penalty of superstitious worshippers; but in canonisation the pope speaks as a judge, and determines, ex cathedra, upon the state of the canonised. Beatification was introduced when it was thought proper to delay the canonisation of saints, for the greater assurance of the truth of the steps taken in the procedure. Some particular orders of monks have assumed to themselves the power of beatification. Thus Octavia Melchiorica was beatified with extraordinary ceremonies by the Dominicans.

Beating, in book-binding. See Book-binding.

Beating, in English law. See Battery.

Beating, in hunting, a term used of a stag, which runs first one way and then another. He is then said to beat up and down.—The noise made by conies in rutting time is also called beating or tapping.

Beating, or Pulsation, in medicine, is applied to the reciprocal agitation or palpitation of the heart and pulse, or arteries. Some physicians distinguish eighty-one different kinds of simple beatings, and fifteen compound ones. They compute sixty beats in the space of a minute as the proper number in a temperate man; but, in fact, we generally find a greater number.

Beating, in navigation, the operation of making a progress at sea against the direction of the wind in a zig-zag line, or traverse, like that in which we ascend a steep hill. See Tacking.

Beating, in paper-making, signifies the beating of paper on a stone with a heavy hammer, with a large smooth head and a short handle, in order to render it more smooth and uniform, and fit for writing. Engines driven by water are now used.

Beating Flax, or Hemp, is an operation in the dressing of these substances, to render them more soft and pliant. When hemp has been swingled a second time, and the hurds laid by, they take the strikes, and, dividing them into dozens and half-dozens, make them up into large thick rolls, which, being broached on long strikes, are set to dry; after which they lay them in a round trough made for the purpose, and there beat them well with beetles till they handle both without and within as pliant as possible, without any hardness or roughness to be felt: that done, they take them from the trough, open and divide the strikes as before, and, if any be found not sufficiently beaten, they roll them up and beat them over again. Beating hemp is a punishment that was often inflicted on loose or disorderly persons, in houses of correction, before the happy invention of the tread-mill!

Beating, or inflicting stripes, on the person, was one of the most ancient, as well as universal, species of punishment. Among the Romans it obtained, under the denomination of verberatio, fustigatio, flagellatio, pulsatio, &c. In the East it still prevails, under the name of Bastonado, which see.

Beating the Wind was a practice in use in the ancient method of trial by combat. If either of the combatants did not appear in the field, at the time appointed, the other was to beat the wind, or make so many flourishes with his weapon; by which he was entitled to all the advantages of a conqueror. Perhaps St. Paul alludes to this 1 Cor. ix. 26.

Beating Time, in music, a method of measuring and marking the time for performers in concert, by a motion of the hand and foot up or down successively, and in equal times. Knowing the true time of a crotchet, and supposing the measure actually subdivided into four crotchets, and the half measure into two, the hand or foot being up, if we put it down with the very beginning of the first note or crotchet, and then raise it with the third, and then down with the beginning of the next measure; this is called beating the time; and, by practice, a habit is acquired of making the motion very equal. Each motion down and up is called a time or measure. The general rule is, to contrive the division of the measure so, that every down and up of the beating shall end with a particular note, on which greatly depends the distinctness; and, as it were, the sense of the melody. Hence the beginning of every time or beating in the measure is reckoned the accented part of it. Beating time is denoted, in the Italian music, by the term of a battuta, which is usually put after what they call recitativo, where little or no time is observed, to denote that here they are to begin again to mark or beat the time exactly. The Romans aimed at somewhat of harmony in the strokes of their oars; and had an officer called portisculus in each galley, whose business was to beat time with the rowers, sometimes by a pole or mallet, and sometimes only by his voice. The ancients marked the rhythm in their musical compositions; but, to make it more observable in the practice, they beat the measure or time in different manners. The most usual consisted in a motion of the foot, which was raised from, and struck alternately against, the ground, according to the modern method. Doing this was commonly the province of the master of the music, who was thence called μεσοχορος, and κορυφαιος, because placed in the middle of the choir of musicians, and in an elevated situation, to be seen and heard more easily by the whole company. These beaters of measure were also called by the Greeks ποδοκτυποι, and ποδοψιφοι, because of the noise of their feet, and συντοναριοι, because of the uniformity or monotony of the rhythm. The Latins denominated them podarii, pedarii and pedicularii. To make the beats or strokes more audible, their feet were generally shod with a sort of sandals, either of wood or iron, called by the Greeks κρουπεζια, κρουπαλα, κρευπητα, and by the Latins pedicula, scabella, or scabilla, because resembling little stools or foot-stools. Sometimes they beat upon sonorous foot-stools, with the foot shod with a wooden or iron sole. They beat the measure not only with the foot, but also with the right hand, all the fingers of which they joined together, to strike into the hollow of the left. He who thus marked the rhythm, was called manuductor. The ancients also beat time with shells, as oyster shells and bones of animals, which they struck against one another, much as the moderns now use castanets, and the like instruments. This the Greeks called κρημβαλιαζειν, as is noted by Hesychius. The scholiast on Aristophanes speaks much to the same purpose. Other noisy instruments, as drums, cymbals, citterns, &c., were also used on the same occasion. They beat the measure generally in two equal or unequal times; at least, this holds of the usual rhythm of a piece of music, marked either by the noise of sandals, or the slapping of the hands. But the other rhythmic instruments last-mentioned, and which were used principally to excite and animate the dancers, marked the cadence after another manner; that is, the number of their percussions equalled, or even sometimes surpassed, that of the different sounds which composed the air or song played.

Beatitude, in divinity, denotes the fruition of God in a future life to all eternity. Beatitude is also used in speaking of the theses contained in Christ's sermon on the mount, whereby he pronounces the poor in spirit, those that mourn, the meek, &c., blessed.

Beatitude, in ecclesiastical affairs, was a title anciently given to all bishops; but of latter days has been restrained to the pope. It appears to have been sometimes also given to laymen.

BEATON (David), archbishop of St. Andrew's, and a cardinal of Rome, in the early part of the sixteenth century, was born in 1494. Pope Paul III. raised him to the degree of a cardinal in December 1538; and being employed by James V. in negociating his marriage with the court of France, he was there consecrated bishop of Mirepoix. Soon after his instalment as archbishop of St. Andrew's, he promoted a furious persecution of the reformers in Scotland; but the king's death put a stop, for a time, to his arbitrary proceedings, he being then excluded from affairs of government, and confined He raised, however, so strong a party, that, upon the coronation of the young queen Mary, he was admitted in the council, made chancellor, and procured a commission as legate à latere from the court of Rome

He now began to renew his persecution of heretics: and, among the rest, of the famous protestant preacher George Wishart, whose sufferings at the stake he viewed from his window with apparent exultation. It is said, that Wishart, at his death, foretold the murder of Beaton, which indeed happened shortly after, he being assassinated in his chamber, May 29th, 1547. Beaton had great talents, and vices that were no less conspicuous.

Beaton (James), a nephew of the archbishop, was born at Balfour, in 1530, and raised to the archbishopric of Glasgow, when about twenty-five years of age. In 1560 he collected the sacred vessels and records belonging to his cathedral, and embarked for France, where he died in 1603. He wrote a history of Scotland, but it was never printed.

BEATORUM Insula, in ancient geography, was seven days journey west of Thebæ, a district of the Nomos Oasites, and called an island, because surrounded with sand, like an island with water; yet abounding in all the necessaries of life. Some suppose it to have been a third Oasis, in the Regio Ammoniaca; and the site of the temple of Ammon answers to the above description, as appears from the writers on Alexander's expedition thither. Ulpian says, it was a place of banishment for criminals from which there was no escape.

BEATSON (Robert), an ingenious and extensive compiler of books, was born in 1742 at Dysart, in the county of Fife. At the age of fourteen he entered into the army, but rising no higher than to the rank of lieutenant, turned his attention to literature as a profession, and in 1786 published A Political Index to the Histories of Great Britain and Ireland, of which there have been three editions. In 1790 appeared his Naval and Military Memoirs of Great Britain, in 3 vols. 8vo., to which he subsequently added three more; and in 1807 a Chronological Register of both Houses of Parliament from the Union. He obtained the degree of doctor of laws from the university of Edinburgh, and was a member of the Royal Society of Scotland. He died in 1818. He was also the author of an Essay on vertical and horizontal Windmills.

BEATTIE (James), LL. D., professor of moral philosophy and logic in the Marischal college, Aberdeen, was born in Kincardineshire, in 1735. His father, who kept a small shop in Laurencekirk, and rented a farm in the neighbourhood, gave him all the education which could be obtained at the parish school, and afterwards sent him to the university of Aberdeen. There he pursued his studies with great diligence, and was soon preferred to a bursary. Having continued four years at the university, studying philosophy and divinity, with a view to the established church, and no prospect opening for him, he accepted in 1753, of the office of schoolmaster and parish clerk in the parish of Fordun. Here he continued four years, little known or noticed. In 1758 he was appointed one of the ushers to the grammar school of Aberdeen, and soon after gained attention among the men of letters in the university. In 1760 he published a small volume of original poems and translations, and the same year was appointed professor of philosophy; the duties of which situation he continued to discharge till within a short time of his death. Aberdeen could at this period boast of Drs. Campbell, Gerard, Gregory, and Reid, among its professors; and the benefits which their new associate must have derived from such company, were rendered still more invaluable, by the harmony in which they lived with each other, and the familiar manner in which they communicated their sentiments. In a kind of literary club, which met twice a month, they discussed freely all the topics of literature and philosophy which occurred to any of them; and it was in this society that those speculations took their rise, which have since made their names so familiar to all who read for instruction. In 1763 Mr. Beattie visited London, and in 1765 published his Judgment of Paris; this year also, he became acquainted with the poet Gray, and continued in close friendship with him while he lived. In 1767 he married a daughter of Dr. Dun, master of the grammar school; and about this time seems to have begun his Minstrel, and his Essay on the Nature and Immutability of Truth; the latter of which was published in 1770. It was designed particularly to oppose the philosophy of Hume, who is said to have been so sensible of the strength of its arguments and popularity, that he never afterwards could hear the name of Beattie mentioned without displeasure. In 1771 appeared the first canto of that beautiful poem, The Minstrel, which was completed in 1774, and in a very short time ran through several editions. In a second journey to London, he was introduced by his friend Dr. Gregory to Mrs. Montagu, and to all the distinguished literary society then in the metropolis. He visited London a third time in 1773, and associated for some months with Drs. Johnson, Porteus, and other eminent men. About this time he received an honorary degree of LLD. from Oxford; and obtained a pension from the king of £200 per annum. He had also the honor of an interview with their majesties. This year there was a proposal for transferring Dr. Beattie to the university of Edinburgh, but he declined it; and in 1774 two offers were made him in the church of England, one of them a living of £500 a year, with views of further preferment; but these he also declined. Dr. Priestley at this time made an attack upon him, of which, however, he took no notice. In 1776 he published a volume of Essays; and in 1783, Dissertations Moral and Critical, in one volume 4to. At the recommendation of the bishop of London, in 1786, he published two small volumes on the Evidences of the Christian Religion; and in 1790 the Elements of Moral Science, being the outlines of his academical lectures. Dr. Beattie was very much tried by domestic affliction: his wife became the victim of hereditary insanity, and his two sons, James Hay and Montagu, died successively, after attaining to manhood. The situation of his wife, and the precarious state of his own health, had sunk him into an habitual depression; but the death of his eldest son James, who had been conjoined with him in the professorship, was so severe a shock to him that he never recovered from it. But the sudden death of his only remaining child in 1796, completely unhinged his mind; the first symptom of which was a temporary, but almost total loss of memory, respecting his son. At this time, after searching in every room in the house, he would say to his niece, Mrs. Glennie, 'You may think it strange, but I must ask you if I have a son, and where he is?' She then felt herself,' says Sir William Forbes, 'under the painful necessity of bringing to his recollection his son Montagu's sufferings, which always restored him to reason. And he would often, with many tears, express his thankfulness that he had no child, saying, 'How could I have borne to see their elegant minds mangled with madness!' When he looked for the last time on the dead body of his son, he said, 'I have now done with the world.' His last publication was An Account of the Life, Character, and Writings of James Hay Beattie. His spirits from this period were never restored, and his health continued gradually to decline, till, in 1799, he was struck with palsy; and, after being reduced to a state of permanent insensibility, this excellent man, all of whose labors tended to enlighten and benefit mankind, expired in June, 1803.

BEAU′,
BEAU′ISH,
BEAU′SHIP. } From the Fr. *beau*, good, gay, fine. The plural *beaux* is now Anglicised. A *beau* is a man of dress, whose great care is to deck his person. Vulgarly employed to designate a lover, who of course must be a smart fellow. A *beau* was the dandy of the last age, as a dandy is the fop of the present.

What will not *beaux* attempt to please the fair.
Dryden.

The water nymphs are too unkind
To Vill'roy; are the land nymphs so?
And fly they all, at once combin'd
To shame a general, and a *beau*? *Prior.*

You will become the delight of nine ladies in ten, and the envy of ninety-nine *beaux* in a hundred.
Swift.

A youth more glitt'ring than a birth-night *beau*,
That even in slumber caus'd her cheek to glow.
Pope. Rape of the Lock.

With varying vanities from ev'ry part,
They shift the moving toy-shop of their heart,
Where wigs with wigs, with sword-knots sword-knots strive,
Beaux banish *beaux*, and coaches coaches drive.
This erring mortals levity may call,
Oh blind to truth! the sylphs contrive it all. *Id.*

Just at that time of life, when man by rule,
The fop laid down, takes up the graver fool,
He started up a fop, and fond of show
Look'd like another Hercules turn'd *beau*.
Churchill.

BEAU (Charles le), a learned French author, born at Paris in 1701. He became professor in the Royal College, and secretary of the Academy of Inscriptions. He wrote a history of the Lower Empire, in 22 vols. which is much esteemed; also Opera Latinæ, published at Paris five years after his death, in 3 vols. 12mo. He died at Paris in 1778.

BEAU (John Lewis le), brother of Charles, was also a man of considerable learning. He was born at Paris in 1721, and became professor of rhetoric in the college of the Grassins, and member of the academy of inscriptions. In 1746 he published an edition of Homer in Greek and Latin, 2 vols: and in 1750, the Orations of Cicero, 3 vols.: also a Discourse on the Poverty of the Learned. He died in 1766.

BEAUBASSIN, a bay in the straits of Magellan, on the coast of Terra del Fuego, so named by Bougainville. According to his account, there is good anchorage in it from forty to twelve fathoms; the bottom of sand, small gravel, and shells. Long. 71° 13′ W., lat. 54° 22′ S.

BEAUCAIRE, a town of France, in the department of the Gard and ci-devant province of Languedoc, on the Rhone, opposite to Tarascon, with which it has a communication by a bridge of boats. The fair of the Magdalen, which is held July 22, partly in the town, and partly under tents in an adjacent valley, for seven days, is one of the most famous in Europe, though of late it has declined. Beaucaire is ten miles east of Nismes. The canal of Aigues Mortes now extends to this town, where it communicates with the Rhone. On the Rhone, opposite Tarascon, are the picturesque ruins of an old castle. Its population is stated to be 8500. Long. 4° 39′ E., lat. 43° 50′ N.

BEAUCE, one of the former provinces of France, famous for its fertility in grain. It was situated between Perche, the Isle of France, the Blasois, and the Orleanais, Chartnes was its capital. Beauce now forms a part of the department of the Eure and Loir.

BEAUCLERC, PORT, a good harbour in an island in the North Pacific, on the west coast of North America. Long. 226° 23′ E., lat. 56° 17′ N.

BEAUCLERK (Topham), a gentleman of whom Dr. Johnson said, referring to his conversational power and facility of expression, that his talents were those which he had felt himself more disposed to envy than those of any whom he had known. He was the son of lord Sidney Beauclerk, and was born in December 1739. In 1763 he married lady Diana Spencer, daughter of the duke of Marlborough, whose previous marriage with viscount Bolingbroke had two days before been dissolved by act of parliament. Mr. Beauclerk died at his house in Great Russell Street, Bloomsbury, March 11, 1780, leaving by his wife a son and two daughters, and a very valuable library. Lady Diana Beauclerk long survived him, and died in August 1808, at the age of seventy-four. She was a lady distinguished for her taste and skill in the arts.

BEA′VER. Sax. *befer*, Dut. *bever*, Germ. *biber*, Fr. *bievre*, Lat. *fiba*. An animal, otherwise named the *castor*, amphibious, and remarkable for his art in building his habitation; of which many wonderful accounts are delivered by travellers. His skin is very valuable on account of the fur. Of this fur, hats of the best quality are manufactured, and therefore called *beavers*.

Highe on hors he sat,
And on his hed a Flaundrish *bever* hat.
Chaucer.

Then unto him all monstrous beasts resorted,
Bred of two kindes; as griffons, minotaurs,
Crocodiles, dragons *beavers*, and Centaures.
Spenser. Mother Hubberd's T

ou felt the wool of *beaver?*
' down ever?
smelt o' the bud o' the briar,
ard in the fire,
tasted the bag of the bee;
hite! Oh, so soft! Oh so sweet is she!
Ben Jonson.

laced this invention upon the *beaver*, for the
and wisdom of that animal; indeed from its
building. *Browne's Vulgar Errours.*

e a smart rhetorician turning his hat, mould-
to different cocks, examining the lining and
n during his harangue: a deaf man would
was cheapening a *beaver*, when he is talking
e of a nation. *Addison.*

broker here his spacious *beaver* wears,
his brow sit jealousies and cares. *Gay.*

ER, } From *baviere*, French; *baviere*,
ERED. } says Cotgrave, is the *bib*, mocket,
eter, to put before the bosom of a slaver-
d; so that baviere or beaver, is, accord-
he Ency. Met., that part of the helmet
ts down to enable the wearer to drink,
ch receives the drops or dribblings; by
are and others, however, as the editor
it is quite oppositely applied.

His dreadful hideous head,
couched on the *beaver*, seem'd to throw
flaming mouth bright sparkles fiery red.
Spenser.

ars seems bankrupt in their beggar'd host,
tly through a rusty *beaver* peeps. *Shakspeare.*

young Harry,—with his *beaver* on,
isses on his thighs, gallantly arm'd,—
rom the ground like feather'd Mercury,
aulted with such ease into his seat,
n angel dropp'd down from the clouds,
n and wind a fiery Pegasus,
itch the world with noble horsemanship. *Id.*

s slain upon a course at tilt, the splinters of
going in at his *beaver*. *Bacon.*

aver'd brow a birchen garland bears,
with infant's blood, and mother's tears.
Pope.

ER, in zoology. See Castor.

ER Skins are a prodigious article of
eing the foundation of the hat manufac-
n 1763 were sold, in a single sale of the
's Bay Company, 54,670 skins. They
their colors; the finest are black, but the
color is a chestnut brown, more or less
ome have been found, but very rarely,
They are distinguished by the names of
aver, which is what has been worn as
s by the Indians: parchment beaver,
the lower side resembles it; and stage
which is the worst, and is that which the
kill out of season, on their stages or
s. Besides hats and furs, in which the
hair is commonly used; they attempted
nce, in 1699, to make cloths, flannels,
s, &c. partly of beaver's hair, and partly
via wool. This manufactory, which was
t Paris, in St Anthony's suburbs, suc-
at first pretty well; and, according to the
of the French, the novelty of the thing
into some repute the stuffs, stockings,
and cloth, made of beaver's hair. But
ere found of very bad wear, and the

colors quickly faded: when they had been wet, they became dry and hard, like felt. When the hair has been cut off from the skins, to be used in the manufacture of hats, the skins are employed by trunk-makers, to cover trunks and boxes; by shoe-makers; and by turners, to make sieves, &c. Merchants distinguish beaver skins into,

1. Beaver, Dry, which is sometimes called lean beaver, and which comes from the summer hunting at the time when these animals lose part of their hair. Though this is inferior to the new beaver, yet it may also be employed in furs; but it is chiefly used in the manufacture of hats. The French call it summer castor or beaver.

2. Beaver, Fat, is that which has contracted a certain gross and oily humor, from the perspiration which exhales from the bodies of the savages, who wear it for some time. Though this is a better kind than the dry beaver, yet it is used only in the making hats.

3. Beaver, New, or White Beaver, also called Muscovy beaver, because it is commonly kept to be sent into Russia, is that which the savages catch in their winter hunting. It is the best, and the most proper for making fine furs, because it has lost none of its hair by shedding.

Beaver Creek, a river of North America, which falls into lake Erie at its east end, about seven miles south-east from Fort Erie. 2. A river of North America, which falls into the Allegany. Twenty-eight miles north-west from Pittsburg. 3. A river of Kentucky, which runs into the Cumberland. 4. A river of Georgia, which runs into the Tennessee.

Beaver Islands, are a remarkable chain of small islands in lake Michigan, extending about thirty miles south-west. They appear beautiful, but the soil is barren.

Beaver Kill, a river of North America, which falls into the Popachton branch of the Delaware.

Beaver Lake, in North America, lies in about 52° 45′ N. lat., and 101° 30′ W. long.

Beaver River, so called from the multitude of beavers which frequent its banks, a river of North America, which rises on the eastern side of the rocky mountains, and falls into the Yellowstone from the north.

Also a river of North America, which rises in the ridge of mountains that divides the waters which discharge themselves into Hudson's bay, from those which flow towards the Northern Ocean. It falls into Lake la Crosse, in about 56° N. lat. and 108° W. long.

Beaver's Town, a town of the United States of America, in the western territory, built in 1764. Eighty-five miles north-west of Pittsburg.

BEAUFORT a sea-port of the United States, in Carteret, North Carolina county, North America. Fifty-five miles south by east of Newburn. Long. 77° W., lat. 34° 47′ N.

Beaufort, a town of the United States, in South Carolina, situated on the island of Port Royal, at the mouth of Coosawhatchie river It has an excellent harbour, and is seventy-three miles from Charlestown. Long. 80° 55′ W., lat. 32° 26′ N.

Beaufort en Vallee, a town of France, in the department of the Maine and Loire, late province of Anjou, with a castle. It contains two parishes, and formerly had a convent of Recolets. Beaufort gives the title of a Duke in England to the noble family of Somerset, who are lineally descended from John of Gaunt, duke of Lancaster, whose duchess resided here. It contains 800 houses, 6000 inhabitants, and carries on an active trade in grain, wine, and hemp, with manufactures of linen and woollen stuffs, and hats. The village of Beaufort en Franchise, or Beaufort hors la Ville, is separated from this town by an arm of the river Coesnon. Fifteen miles east of Angers, and thirty-eight west of Tours.

Beaufort District, a county of South Carolina, which lies on the sea-coast, between Combahee and Savannah rivers.

Beaufort (Henry), brother of Henry IV. king of England, was made bishop of Lincoln, whence he was translated to Winchester. He was also nominated chancellor of the kingdom, and sent ambassador to France. In 1426 he received a cardinal's hat, and was appointed legate in Germany. In 1431 he crowned Henry VI. in the great church of Paris. He died at Winchester in 1447. He was a haughty, turbulent prelate, and Shakspeare is considered as giving a true portrait of him, when he describes his last scene.

Beaufort (Margaret), the foundress of Christ's and St. John's colleges in Cambridge; the only daughter and heir of John Beaufort, duke of Somerset, and of Margaret Beauchamp, was born in 1441. She married in 1456 Edmund, earl of Richmond, by whom she had king Henry VII. and died in 1509, after having had two other husbands, namely, Sir Henry Stafford, and Thomas, lord Stanley, earl of Derby. By her marriage, according to bishop Fisher, with the earl of Richmond, and by her birth, she was allied to thirty kings and queens, within the fourth degree of either blood or affinity. Besides the foundation of the two colleges at Cambridge, before-mentioned, she left salaries for two divinity lecturers, one at Oxford, and the other at Cambridge; as also for a grammar-school at Wimborn, and other foundations in support of learning, of which she was not altogether deficient herself, as appears from some of her works, namely, 1. The Mirroure of Gold for the Sinful Soul; translated from the French version of a book entitled, Speculum Aureum Peccatorum. 2. A translation of the fourth book of Gerson's treatise, entitled, Of the Imitation and Following the Blessed Life of our Most Merciful Saviour Jesus Christ; printed at the end of Dr. Atkinson's English translation of the three first books, 1504. 3. A Letter to her Son, printed in Howard's Collection of Letters. She was also possessed of extraordinary zeal in religion, and declared that provided she could induce the princes of Christendom to form a league, and march against the infidels, she would willingly attend them as their laundress.

Beaufort (Lewis de), a celebrated writer of the eighteenth century. He distinguished himself in the literary world by several valuable works, and was chosen fellow of the Royal Society of London. He wrote the History of Germanicus; Dissertation upon the Uncertainty of the five first Ages of the Roman Republic; History of the Roman Republic, or Plan of the Ancient Government of Rome. He died at Maestricht in 1795.

BEAUFORTIA, in botany, a genus of plants of the class polyadelphia, and order icosandria. Its generic characters are five groups of stamens opposite to the petals: ANTHERS inserted into the base; bifid at the apex, lobes deciduous: CAPS. trilocular one-seeded, connate, included in the thickened tube of the calyx adnate at the base. It contains two species, natives of New Holland.

BEAUFRONT, a small town of Northumberland, on the Tyne.

BEAUGENCY, a town of France, in the department of the Loiret, and arrondissement of Orleans, seated on the Loire. Long. 1° 46′ E., lat. 47° 48′ N. It had formerly the title of county, has 4900 inhabitants, and is the head of a canton. It has a considerable trade in wine and brandy; a few cloth stuffs are also manufactured, and there are several tanneries. Over the Loire is a stone bridge. Fifteen miles south-west of Orleans, and eighteen north-east of Blois.

BEAUHARNOIS (Alexander de), a French nobleman, who perished during the revolution, and who was the first husband of the late empress Josephine of France. He was born at Martinique, and going early in life to Paris, was elected deputy of Blois in the Constituent Assembly, in which he joined the popular party. He proposed equality of punishments for all classes of citizens, and their eligibility to all offices. After the attempted flight of Louis XVI. Beauharnois was appointed adjutant-general to Luckner, general-in-chief of the army of the Moselle, in which post he gave many proofs both of his courage and humanity. He was offered the place of minister of war, which he refused. Five days previous to the fall of Robespierre, he was condemned by the revolutionary tribunal, and perished on the scaffold, July 23d, 1794.

Beauharnois (Eugene de), only son of the preceding, and viceroy of Italy under Napoleon, was intimately connected throughout life with his father-in-law. He is said to have governed Italy with great judgment and moderation, so as to conciliate the respect and esteem of the inhabitants in general. In the Russian campaign he commanded the Italian troops of the grand army. Napoleon's downfall in 1814 terminated Beauharnois's prosperity. In January, 1806, he married the princess Augusta Amelia, eldest daughter of the king of Bavaria, to whose court at Munich he retired on the restoration of Louis XVIII. and died there in 1824.

BEAULIEU, a village of Hampshire, four miles south-west of Southampton, in which are the remains of a Cistercian abbey, founded by king John in 1204. Its walls afforded an asylum to Margaret, the queen of Henry VI. after the battle of Barnet. The celebrated Perkin Warbeck was protected here in later times, when their sanctity was so far respected, that though surrounded by an armed force, he was not seized, but voluntarily surrendered himself.

Beaulieu, a small town of France, on the right bank of the Indre, in the government of Touraine. It had formerly the title of barony; since the revolution it has been included in the department of Indre and Loire. It has 1500 inhabitants.

BEAULIEU (Sebastian de Pontault de), a celebrated French engineer, and major-general under Louis XIV. He published plans of all the battles and sieges of his master, to which he added historical subjects in perspective. He died in 1674.

BEAUMARCHAIS (Heter Augustin Caron de), an ingenious French artist and dramatic writer, was born at Paris in 1732. His father was a clock-maker, and early in life he applied himself with great diligence to that occupation. He invented a new escapement, the honor of which was contested by another artist, but the Academy of Sciences determined it in favor of young Beaumarchais. At the commencement of the revolution he retired to Holland, from whence he came to England, and was proscribed by the convention, yet he ventured to return to his country, where he died in 1799. See ANTOINETTE.

BEAUMARIS, a borough, market, fair, and assizes town, in the hundred of Tyndaethwy, and county of Anglesea, situated on a level tract at the foot of Baron hill, and at the entrance of the Menai straits. It is 243 miles from London, holds markets on Wednesdays and Saturdays, fairs four times in the year, and contains a population amounting to 2205 inhabitants. The high street is handsome, open, and adorned with well built houses, the back streets remarkably neat, and the villas on the green and along the shore graceful in design, and enjoy the prospect of an unrivalled landscape. The church, dedicated to St. Mary, is a spacious and elegant structure: the town hall affords accommodation to the members of the corporation on public occasions, and includes an elegant suite of assembly rooms. The county court, jail, custom house are on a scale proportioned to the necessities of the place. The great facility of bathing afforded by a gently shelving strand, and the attraction of the majestic scenery encompassing the bay, have occasioned a great influx of visiters to this remote and interesting little town. Public baths, reading and billiard rooms have been established here; a noble inn erected by the principal proprietor, and a regular intercourse preserved with Liverpool and Chester by steam-boats. David Hughes, a native of Beaumaris, founded a free school, here A. D. 1600, and an almshouse for six poor men, which number was augmented to ten, by the late and last Lord Bulkeley. The corporation consists of a mayor, recorder, two bailiffs, &c., and the borough is contributing with others in sending one member to parliament. Here the great and quarter sessions are held, and, although there is little trade, yet, owing to the secure asylum adjacent, called "Friar's road," vessels put in here both on the inward and outward passages; many good sloops also belong to the port, and ships are frequently cleaned and refitted here on the beach. The character of the Beaumaris roadstead is not deteriorated by the melancholy loss of the *Rothsay* steamer, with 120 souls on board, this catastrophe being wholly attributable to the ill-conduct of the unfortunate persons who had charge of her. This place was the ancient Bonovium, a name exchanged for the Norman compound Beau-maris, or the beautiful marsh, by King Edward I., the founder of the noble castle, which still constitutes one of the most interesting features in the beautiful scenery of this vicinity. The ruins are extensive, in good preservation, and the new entrance gate forms the termination of the principal street. This was a regular garrison until the reign of Henry VII. In 1642 it was again garrisoned and held by Thomas, subsequently, Lord Bulkeley, for King Charles, and surrendered at last to General Mytton, having obtained conditions the most honourable. In the immediate neighbourhood are Friars, the seat of Lady Williams, Baron Hill, the noble mansion of Sir R. B. Williams Bulkeley, bart., governor of the castle. In one of the shrubbery walks of this elegant demesne is preserved an ancient stone coffin, brought thither from Friars, and supposed to have contained the mortal remains of Joan, daughter of King John, and consort of Llewellyn, Prince of Wales. The last Lord Bulkeley was a munificent benefactor of Beaumaris, and his memory is cherished there with much fondness. To him are due the improvements of the town, augmentation of its charitable institutions, new line of road, four miles in length, from the town to the Menai bridge, and many other works dictated by benevolence, and executed with wisdom. One ferry establishes a communication with Aber, at low water, and Garth Ferry with the city of Bangor, at all times of tide.

BEAUMELLE (Laurence), a French author, born at Vallerangue, in Lower Languedoc, in 1727. He was a man of considerable abilities, and went to Denmark, where he settled for some time as professor of belles lettres. He wrote a Defence of the Spirit of Laws; Letters to Voltaire; Thoughts of Seneca; a Commentary upon the Henriade; a Life of Mad. Maintenon, &c., but was twice confined in the Bastile for libels and satires. The king, however, appointed him his librarian in 1772. He died at Paris in 1773.

BEAUMONT (Francis), a celebrated dramatic writer, who flourished in the reign of James I., was descended from an ancient family of his name at Grace-Dien, in Leicestershire, where he was born about 1585 or 1586, in the reign of queen Elixabeth. Out of fifty-three plays, which are collected together as the joint labours of Beaumount and Fletcher, (for an account of their celebrated joint works, see FLETCHER,) Mr. Beaumont was concerned in the greater part, yet he did not live to complete his thirtieth year, death summoning him away in the beginning of March, 1615. He was interred in the entrance of St. Benedict's chapel, Westminster, abbey.

BEAUMONT (Sir John), the elder brother of Francis the poet, was born in 1582, and educated at Oxford, whence he removed to one of the inns of court. In 1626 he had the dignity of a baronet conferred on him by king Charles I. He wrote, The crown of Thorns, a poem, in eight books; Bosworth Field, and other poems; Translations from the Latin Poets; and several poems on religious and political subjects: as, on the Festivals; on the Blessed Trinity; a Dialogue between the World, a Pilgrim, and Virtue; Of the miserable State of Man; Of Sickness, &c. He died in 1628. His poetic genius was celebrated by Ben Jonson and Michael Drayton.

Beaumont (Mad. le Prince de), a literary lady, a native of Rouen, in Normandy, who kept a boarding school for young ladies at London, and afterwards at Annecy, in Savoy, where she died in 1780. Her publications are, Magazin des Enfans; Magazin des Adolescens; Magazin des Jeunes Dames; Nouveau Magazin Anglois; Lettres de Madame du Montier; and The New Clarissa.

Beaumont (Elie d'), a French advocate, born at Carentan in 1732. He distinguished himself by his interesting memoir in favor of the unfortunate family of Calas, the effect of which upon the nation was very great. Besides this, he wrote several other pieces of considerable merit. He died in 1785. The much admired novel, entitled, Letters of the Marquis de Roselle, was written by his wife, who died in 1783.

Beaumont de Lomagne, a town of France, in Gascony, with 3700 inhabitants; the head of a canton, situated in the department of the Tarn and Garonne. Here are manufactures of coarse cloths, hats, and leather. It stands on the small river Gimone, twenty-eight miles north-west of Toulouse.

Beaumont le Vicomte, a town of France, in the province of Maine, and department of the Sarthe. It contains 2400 inhabitants, with manufactures of woollen stuffs, and lies on the river Sarthe, fifteen miles north of Le Mans, and fifteen south of Alençon.

Beaumont sur Oise, a small town of France, with 2150 inhabitants. It is situated in the department of the Seine and Oise, on the river Oise, twenty miles north of Paris.

Beaumont sur Vingeanne, a town of France, in Burgundy, department of the Cote d'Or, ten miles west of Gray, and thirteen north-east of Dijon.

BEAUNE, or **Beaulne**, a town of France, in Burgundy, included since the revolution in the department of the Cote d'Or; the head of an arrondissement of nine cantons. It is tolerably well fortified, and has a castle, with five suburbs. The only public establishment deserving mention is the hospital, founded in 1443, by the chancellor Rollin. In former times it was the third town in Burgundy, the seat of a governor, and other functionaries, and the capital of the district called from it the Beaunois. The town is particularly celebrated for its wines, and lies in an agreeable country, on the right bank of the Bouzeoise, not far from the Saone. Twenty miles S.S.W. of Dijon, and twenty-three north-east of Autun. Inhabitants about 10,200.

Beaune (James de), baron of Samblançai, an unfortunate financier under Francis I. While that monarch was contending about the Milanese, Beaune had settled matters for sending 300,000 crowns to Lautrec, the commander, for paying the troops; but the queen mother demanded the money for herself, threatening to ruin the superintendant if he did not satisfy her demand, and thus obtained it. In consequence of the army not receiving the promised supply, they failed in their design, and laid the blame upon Samblançai, against whom they complained to the king. The baron endeavoured to justify himself, by laying before the king the real cause; but the queen mother bribed his secretary to deliver to her the receipts she had granted to him, by which means he was deprived of the only evidence for substantiating his innocence; he was accordingly accused of having made use of the money himself, and was executed in 1527. He met his fate with the utmost intrepidity; and his courage is commemorated in a beautiful epigram by the poet Marot.

BEAU-PLEADER, or **Bew-pleader**, a writ on the statute of Marlbridge, whereby it is provided that no fine shall be taken of any man in any court for fair pleading, i. e. for not pleading aptly, and to the purpose.

BEAURAIN (John de), geographer to Lewis XV. was born at Aix in 1697. Besides constructing a number of charts, he published a topographical and military description of the campaigns of Luxemburg, from 1690 to 1694. three volumes, folio. He died in 1771.

BEAUREGARD L'Eveque, a town of France, in the department of the Puy-de-Dome, has an elegant castle, which, before the revolution, belonged to the bishop of Clermont. The memory of the celebrated Masillon is still cherished here by the inhabitants. Beauregard is not far from the Allier. Nine miles east of Clermont-Ferrand.

BEAURIEU (Gaspard-Guillard de), an ingenious French philosopher, born in the county of Artois in 1727. His most celebrated work was the Pupil of Nature, two volumes. He fell a sacrifice to the revolutionary storms, being left to perish in an hospital in 1795.

BEAUSOBRE (Isaac de), a very learned French Protestant writer, was born at Niort in 1659. He was forced into Holland to avoid the execution of a sentence, which condemned him to make the amende honorable, for having broken the royal signet, which was put upon the door of a church of the reformed, to prevent the public profession of their religion. He went to Berlin in 1694; was made chaplain to the king of Prussia, and counsellor of the royal consistory. He died in 1738, aged seventy-nine, after having published, 1. Defense de la Doctrine des Reformés. 2. A Translation of the New Testament and Notes, jointly with M. Lenfant. 3. Dissertation sur les Adamites de Boheme. 4. Histoire Critique de Manichees, et du Manicheisme, two vols. quarto. 5. Several dissertations in the Bibliotheque Britannique, &c. M. Beausobre had strong sense, with profound erudition; he preached as he wrote, with warmth and spirit.

Beausobre (Lewis), counsellor to the king of Prussia, was born at Berlin in 1730. He wrote Philosophical Dissertations on the Nature of Fire. Le Pyrrhonisme du Sage; and Les Songes d'Epicure. He died in 1783.

EAU'TY, *v.* & *n.*
EAUTE'OUS,
EAUTE'OUSLY,
EAUTEOUS'NESS,
EAUTI'FIER,
EAUTI'FUL,
EAUTI'FULLY,
EAUTIFUL'NESS,
EAUTI'FY,
EAUTIFY'ING,
EAUTI'LESS,
EAUTY'WARNING,

Beauté, French; from the ancient Latin, *benus*, i. e. *bonus*; fair; good; lovely. It is applied to external objects; to whatever imparts pleasure and comes under the cognizance of the senses; there is also an ideal world of beauty; the various qualities of the human mind and chaer, and the productions of the intellect which a relation to taste; beauty of scenery; ity of person; beauty of description, of ights, of words, of actions.

ut, for to spekin of her eyin clere!
o! truily thei writtin that hire seien,
hat Paradis stode formed in hire eien;
nd with hire richè *beaute* evirmore
trove love in hire aie which of hem was more.
Chaucer. Troilus and Creseide.

aire Marian, the muses onely darling:
hose *beautie* shyneth as the morning cleare,
ith silver dew upon the roses pearling. *Spenser.*

is *beauty* truly blent, whose red and white
ature's own sweet and cunning hand laid on.
Shakspeare.

eauty and grace are like those beams and shinings come from the glorious and divine sun, which diverse, as they proceed from the diverse objects, lease and affect our several senses; 'as the speof *beauty* are taken at our eyes, ears, or coned in our inner soul,' as Plato disputes at large in Dialogue de Pulchro, Phaedos, Hyppias; and, r many sophistical errors are confuted, concludes *beauty* is a grace in all things, 'delighting the , ears, and soul itself; so that, as Valesius infers, ce whatsoever pleaseth our ears, eyes, and soul, t needs be *beautifull*, fair, and delightsome to us.
Burton. Anat. Mel.

is hair (which the young men of Greece used to r very long) was stirred up and down with the d, which seemed to have a sport to play with the sea had to kiss his feet; himself full of irable *beauty*, set forth by the strangeness both is seat and gesture; for holding his head up full nmoved majesty, he held a sword aloft with his arm, which often he waved about his crown, as gh he would threaten the world in that extremity.
Sir Philip Sydney. Arcadia.

bed of lilies flow'r upon her cheek,
in the midst was set a circling rose;
ose sweet aspect would force Narcissus seek
liveries, and fresher colours choose,
deck his *beauteous* head in snowy tire;
all in vain; for who can hope t' aspire
uch a fair, which none attain, but all admire?
Fletcher's Purple Island.

Ask me no more where Jove bestows,
When June is past, the fading rose;
For in your *beauties* orient deep,
These flowers, as in their causes, sleep.
T. Carew.

But likeness soon together drew,
What she did separate lay,
Of which one perfect *beauty* grew,
And that was Celia. *Marvell.*

O! she has *beauty* might ensnare
onqueror's soul, and make him leave his crown
andom, to be scuffled for by slaves.
Otway. Orphan.

Like blossom'd trees o'erturn'd by vernal storms,
Lovely in death, the *beauteous* ruin lay.
Young. Night Thoughts.

The lengthened night claps'd, the morning shines
Serene, in all her dewy *beauty* bright,
Unfolding fair the last autumnal day.
Thomson. Seasons.

As lamps burn silent, with unconscious light,
So modest ease in *beauty* shines most bright.
A. Hill.

Perhaps the most complete assemblage of *beautiful* objects that can anywhere be found, is presented by a rich natural landscape, where there is sufficient variety of objects; fields in verdure, scattered trees and flowers, running water, and animals grazing.
Blair's Lectures.

A lady seldom listens with attention to any praise but that of her *beauty*. *Johnson. Rambler.*

The silver light, which hallowing tree and tower,
Sheds *beauty* and deep softness o'er the whole,
Breathes also to the heart, and o'er it throws
A loving languor, which is not repose. *Byron.*

Her cheek of youth was *beautiful*,
Till withering sorrow blanched the bright rose there.
Maturin. Bertram.

BEAUTY. Locke defines beauty, as, 'a certain composition of color and figure, causing delight to the beholder.' Mr. Burke, confining his definition to the merely sensible qualities of things, states beauty to be 'that quality, or those qualities, in bodies by which they cause love, or some passion similar to it.' Others define it, more generally, as a term whereby we express a certain relation of some object, either to an agreeable sensation, or to an idea of approbation. When, therefore, we say a thing is beautiful, we either mean that we perceive something that we approve, or something that gives us pleasure: whence it appears, that the idea annexed to the word beauty is double; which renders the word equivocal, and this is the source of most of the disputes on the subject of beauty.

Mr. Hazlett, in an ingenious dissertation on the subject, in the Supplement to the Encyclopædia Britannica, speaks of it as that property in objects by which they are recommended to the power or faculty of taste—the reverse of ugliness—the primary or most general object of love or admiration.

We do not regard works of science as altogether suited for dissertations on matters of taste. We find our space and our attention occupied with the more tangible and better defined objects of human knowledge. But we shall endeavour to collect the most respectable opinions on this disputed subject.

Beauty, says Dr. Reid, (Essay on the Intellectual Powers of Man, ch. iv.) is found in things so various and so very different in nature, that it is difficult to say wherein it consists, or what can be common to all the objects in which it is found. Of the objects of sense, we find beauty in color, in sound, in form, in motion. There are beauties of speech, and beauties of thought; beauties in the arts, and in the sciences; beauties in actions, in affections, and in characters. In things so different, and so unlike, is there any quality, the same in all, which we may call by the name of beauty? Why then should things so different be called by the same name? They please, and are denominated beautiful, not in virtue of any one quality common to them all, but by means of several different principles in human nature. The agreeable emotion excited by them, and called beauty, is produced by different causes. However, though there be nothing common in the things themselves, yet the kinds of beauty, which seem to be as various as the objects to which it is ascribed, must have some common relation to us, or to something else, which leads us to give them the same name. All the objects we call beautiful, agree in two things, which seem to concur in our sense of beauty. First, when they are perceived, or even imagined, they produce a certain agreeable emotion or feeling in the mind; and, secondly, this agreeable emotion is accompanied with an opinion or belief of their having some perfection or excellence belonging to them. Whether the pleasure we feel in contemplating beautiful objects may have any necessary connexion with the belief of their excellence, or whether that pleasure be conjoined with this belief, merely by the good pleasure of our Maker, Dr. Reid does not determine. Beautiful objects excite an emotion of a soothing and enlivening kind, that sweetens the temper, allays angry passions, and promotes every benevolent affection, and disposes to other agreeable emotions, such as those of love, hope, and joy.

'There is nothing,' says Addison, 'that makes its way more directly to the soul than beauty, which immediately diffuses a secret satisfaction and complacence through the imagination, and gives a finishing to any thing that is great and uncommon. The very first discovery of it strikes the mind with an inward joy, and spreads a cheerfulness and delight through all its faculties.' This agreeable emotion, produced by beautiful objects, is accompanied with an opinion or judgment of some perfection or excellence of those objects, adapted by its nature for producing that emotion; and this, according to Dr. Reid, is a second ingredient in our sense of beauty. To assert, says this writer, that there is in reality no beauty in those objects, in which all men perceive beauty, is to attribute to man fallacious senses; and thus to think disrespectfully of the Author of our being; who has diffused over all the works of nature a profusion of beauties, which are real, and not fanciful, and thousands of which our faculties are too dull to perceive. This author distinguishes our determinations with regard to the beauty of objects into two kinds, viz. instinctive and rational. In the former case, objects strike us at once, and appear beautiful at first sight, without any reflection, and without our being able to say why we call them beautiful, or being able to specify any perfection which justifies our judgment. Whereas our rational judgment of beauty is grounded on some agreeable quality of the object, which is distinctly conceived, and may be specified. Beauty itself may be distinguished into original, and derived. It is natural and agreeable to the strain of human sentiments and of human language, says Dr. Reid, that in many cases the beauty which originally and properly exists in the things signified, should be transferred to the sign; that which is in the cause to the effect; that which is in the end to the means; and that which is in the agen to the instrument. E. G. The beauty of go breeding is not originally in the external beha viour in which it consists; it is derived from th qualities of mind which it expresses; and thoug there may be good breeding without the amiab qualities of mind, its beauty is still derived fro what it naturally expresses. Good breeding the picture; these agreeable qualities are the or ginal; and it is the beauty of the original that reflected to our senses by the picture.

Dr. Reid is of opinion, that beauty originall dwells in the moral and intellectual perfectio of mind, and in its active powers, and that fro this, as the fountain, all the beauty which we pe ceive in the visible world is derived. This w the opinion of the ancient philosophers; and has been adopted by lord Shaftesbury and D Akenside among the moderns.

> Mind, mind alone! bear witness earth and heav'n,
> The living fountains in itself contains
> Of beauteous and sublime. Here, hand in hand,
> Sit paramount the graces. Here, enthron'd,
> Celestial Venus, with divinest airs,
> Invites the soul to never-failing joy.
>
> AKENSIDE.

But neither mind, nor any one of its qualities powers, is an immediate object of perception man. These are perceived through the mediu of material objects, on which their signatures a impressed. The signs of these qualities are i mediately perceived by the senses, and by the reflected to the understanding: and we are a to attribute to the sign the beauty which is p perly and originally in the thing signified. Th the invisible Creator hath stamped on his wor signatures of his divine wisdom, power, and b nignity, which are visible to all men. The wo of men in science, in the arts of taste, and in mechanical arts, bear the signatures of those q lities of mind, which were employed in th production. Their external behaviour or co duct in life expresses the good or bad qualit of their minds. In every species of animals perceive by visible signs their instincts, appetit affections, or sagacity; and even in the inanim world, there are many things analogous to qualities of mind; so that there is hardly thing belonging to mind, which may not be presented by images taken from the objects sense; and, on the other hand, every object sense is beautiful, by borrowing attire from tributes of the mind. Thus, the beauties mind, though invisible in themselves, are p ceived in the objects of sense, on which th beauty is impressed. Thus also, in those q lities of sensible objects to which we ascr beauty, we discover in them some relatio mind, and the greatest in those that are m beautiful. The qualities of inanimate matter, which we perceive beauty, are sound, color, fi and motion: the first being an object of heari and the other three of sight. These several q lities are particularly illustrated by Dr. R with a view of evincing the beauty that resp tively belongs to them. Of all the objects sense, the most striking and attractive beauty perceived in the human species, and particul fair sex. In the following well-known e of Milton, this great poet derives the of the first pair in paradise from those exons of moral and intellectual qualities, appeared in their outward form and deor.

of far nobler shape, erect and tall,
like erect! with native honor clad,
aked majesty, seem'd lords of all,
worthy seem'd, for in their looks divine,
image of their glorious Maker, shone
h, wisdom, sanctitude severe, and pure:
re, but in true filial freedom plac'd,
nce true authority in man; though both
equal, as their sex not equal seem'd;
contemplation he, and valour form'd,
softness she, and sweet attractive grace.

ere we cannot forbear subjoining the ex- t reflections of Mr. Thomson, a late writer subject of beauty: 'If we should see a employ himself with a sledge hammer to he enchanting form of the Venus de Me- o pieces, break her lovely limbs, and de- er beauteous features, we should not hesi- moment to pronounce him a savage ian, without taste, feeling, or sentiment; his frenzy was employed only on a senseece of stone: what then must we think of abolical savage, who exercises the worst of elties (because the most lasting and affect- th to body and mind) on the most beauti- d amiable of all creatures on this side n?—made expressly for his happiness, so- nd delight;—by first corrupting and be- g her, and then basely abandoning her to with want, wretchedness, and misery.'

Blair (Lectures, vol. i. p. 101, &c.), in his ration of the separate principles of beauty, h of those classes of objects, which most kably exhibit it, begins with *color*, as af- g the simplest instance of beauty. With t to this, he observes, that neither variety, iformity, nor any other principle which he , can be assigned as the foundation of ; and that it can be referred to no other but the structure of the eye, which deter- us to receive certain modifications of the f light with more pleasure than others. As gan varies in different persons, they have ifferent respective favorite colors. In some he thinks it probable, that association of has influence on the pleasure which we e from color. Green, for instance, may r more beautiful, by being connected in eas with rural prospects and scenes; white nnocence; blue, with the serenity of the Independently of such associations, those chosen for beauty are, generally, delicate, than glaring. *Figure* opens to us forms uty more complex and diversified. Under ead, regularity is first noticed as a source uty. Thus a circle, a square, a triangle, exagon, please the eye by their regularity, utiful figures. But regularity is not the r the chief foundation of beauty in figure. e contrary, a certain graceful variety is to be a much more powerful principle of y. Regularity, according to this author, expresses beauty chiefly, if not solely, on account of its suggesting the idea of fitness, propriety, and use, which have always a greater connexion with orderly and proportioned forms, than with those which appear not constructed according to any certain rule. Nature, the most graceful artist, hath, in all her ornamental works, pursued variety with an apparent neglect of regularity. Mr. Hogarth, in his Analysis of Beauty, published about the year 1753, enumerates, as elements of beauty, fitness, variety, uniformity, simplicity, intricacy, and quantity; and he observes, that figures bounded by curve lines are, in general, more beautiful than those bounded by straight lines and angles. The beauty of figure principally depends, in his opinion, upon two lines which he has selected. One of them is the 'waving line,' somewhat in the form of the letter S: and this he calls the 'line of beauty,' which is found in shells, flowers, and such other ornamental works of nature, and is also common in the figures designed by painters and sculptors for the purpose of decoration. The other line, which he calls the 'line of grace,' is the former waving curve, twisted round some solid body, and exhibited in twisted pillars and twisted horns, and in the curling worm of a common jack. Variety plainly appears, in the instances which he mentions, to be so material a principle of beauty, that he defines the art of drawing pleasing forms to be the art of varying well; and, according to him, the curve line, which is so much the favorite of painters, derives its chief advantage from its perpetual bending and variation from the stiff regularity of the straight line. *Motion*, says Dr. Blair, furnishes another source of beauty, distinct from figure; being of itself pleasing, so that bodies in motion are, cæteris paribus, preferred to those at rest. But the quality of beautiful belongs to gentle motion, such as that of a bird gliding through the air, and that of a smooth running stream. In general, motion in a straight line is less beautiful than that in an undulating direction; and motion upwards is also commonly more agreeable than motion downwards. The easy curling motion of flame and smoke is an object singularly pleasing, and exhibits an instance of Mr. Hogarth's waving line of beauty. This artist observes, that, as all the common and necessary motions for the business of life, are performed in straight or plain lines, all the graceful and ornamental movements are made in waving lines.

Dr. Beattie, in his Dissertations, Moral and Critical, has introduced, in his digression on beauty, some ingenious remarks on this subject. After observing that custom has a perpetual influence in determining our notions of beauty, he proceeds to prove, that from associations founded on habit, many, or perhaps most of those pleasing emotions are derived, which accompany the perception of what in things visible is called beauty. With regard to the beauty or awkwardness of motion, he observes, that the one will be found to please, and the other to displease, chiefly on account of certain disagreeable ideas suggested by the former, and of certain disagreeable ones associated with the latter. Motions, that imply ease, with such an arrangement and proportion of parts in the moving object, as may give reason to expect its continuance without injury, are generally pleasing, at least in animals, especially when they betoken a sort of perfection suited to the nature of the animal. But motions that betray infirmity, unwieldiness, imperfection, or the appearance of danger, cannot be called beautiful, because they convey unpleasing ideas. These observations are illustrated by a variety of apposite instances. Cicero (de Off. l. i. sect. 36) blames every motion that alters the countenance, quickens the breath, or betrays any discomposure. Rousseau observes, that in running, a woman is destitute of that grace which attends her on other occasions. Perhaps, says Beattie, the jutting out of her elbows, the natural effect of her endeavouring, with lifted hands, to secure the most delicate part of the human frame, may give to her motion the appearance of timidity and constraint. Or, perhaps, she may fail in this exercise, merely because, according to our manners, she cannot be much accustomed to it.

It is not easy to convey, in so few words, so many charming ideas of beauty, in its several varieties of color, shape, attitude, and motion, as Gray has combined in the following image:—

Slow melting strains their queen's approach declare;
Where'er she turns the graces homage pay:
With arms sublime that float upon the air,
In gliding state she wins her easy way:
O'er her warm cheek and rising bosom move
The bloom of young desire, and purple light of love.

Burke, in his Philosophical Inquiry into the Origin of our Ideas of the Sublime and Beautiful, excludes from the number of real causes of beauty, the proportion of parts, fitness, or that idea of utility which consists in a part's being well adapted to answer its end, and also perfection; and he observes, p. 210, that beauty is, for the greater part, some quality in bodies, acting mechanically upon the human mind by the intervention of the senses. The qualities of beauty, as they are merely sensible qualities, which he enumerates, are the following: they should be comparatively small, smooth, various in the direction of their constituent parts; these parts should not be angular, but melted, as it were, into each other; they should be of a delicate frame, without any remarkable appearance of strength; the colors should be clear and bright, but not very strong and glaring; and any glaring color that is introduced should be diversified with others. These are the seven properties upon which, according to this author, beauty depends; properties that operate by nature, and are less liable to be altered by caprice, or confounded by a diversity of tastes, than any others. The physiognomy also, says Mr. Burke, has a considerable share in beauty, especially in that of our own species. The manners give a certain determination to the countenance, which, being observed to correspond pretty regularly with them, is capable of joining the effects of certain agreeable qualities of the mind to those of the body. So that to form a finished human beauty, and to give it its full influence, the face must be expressive of such gentle and amiable qualities as correspond with the softness, smoothness, and delicacy of the outward form. For Mr. Burke's mode of illustrating and confirming his theory of beauty, the reader is referred to his work above cited.

Dr. Sayers, in his Disquisitions, Metaphysical and Literary, 8vo. in 1793, has given a new analysis of beauty, conducted on the principles which were applied by Dr. Priestley, in his Lectures on Oratory and Criticism, and by Mr. Alison, in his Essays on Taste, to the explanation of the intellectual pleasures, namely, the doctrines of the Hartleyan school. His argument, summed up in a few words, is as follows: that individual of a class of objects is justly to be esteemed more beautiful than the rest, with the whole of which, or with its component parts, when properly understood, the greater number of the excellencies of its class are universally associated. The same may be asserted of any species of objects, when compared with any other species of its kind; and that object may be justly esteemed a 'standard of beauty,' with the whole appearance, or with the component parts of which, when properly understood, all the excellencies of its kind are 'universally' associated.

Mr. Alison's Essays, Mr. Knight's Analytical Enquiry, and Mr. D. Stewart's Dissertations on the Beautiful, and on Taste, in his Philosophical Essays, are each of them modern works of sterling merit, and may be said to contain all the known truths of this subject.

Mr. Alison contends, that all beauty, or at least all the beauty of material objects, depends on the associations that may have connected them with the ordinary affections or emotions of our nature; and in this, which is the fundamental point of his theory, we conceive him to be no less clearly right, than he is convincing and judicious in the copious and beautiful illustration by which he has sought to establish its truth. When he proceeds, however, to assert, that our sense of beauty consists not merely in the suggestion of ideas of emotion, but in the contemplation of a connected series of such ideas, and indicates a state of mind in which the faculties, half active and half passive, are given up to a sort of reverie or musing, in which they may wander, though among kindred impressions, far enough from the immediate object of perception, we confess that he not only seems to us to advance a very questionable proposition, but very essentially to endanger the evidence, as well as the consistency, of his general doctrine. In the long train of interesting meditations to which Mr. Alison refers,—in the delightful reveries in which he would make the sense of beauty consist,—it is obvious that we must soon lose sight of the external object which gave the first impulse to our thoughts; and though we may afterwards reflect upon it, with increased interest and gratitude, as the parent of so many charming images, it is impossible that the perception of its beauty can depend upon a long series of various and shifting emotions.

The work of Mr. Knight is more lively, various, and discursive, than Mr. Alison's, but not so systematic or conclusive. It is the cleverest book of the two, but not the most philosophical ion of the subject. He agrees with Mr. in holding the most important, and, in- ie only considerable part of beauty, to de- pon association, and has illustrated this n with a great variety of just and original tions. But he maintains that there is a independent of association, prior to it, ore original and fundamental, the primi- id natural beauty of colors and sounds. is we look upon to be a heresy, and a inconsistent with the very first principles holic philosophy. Language, it is be- affords no other example of so whimsical bination of different objects under one ap- on, or of the confounding of a direct al sensation with the suggestion of a so- d sympathetic moral feeling.

Stewart makes fewer positive assertions, ters less into the matter of controversy. say on the Beautiful is rather philological etaphysical. The object of it is to show at gradual and successive extensions of g, the word, though at first appropriated ote the pleasing effect of colors alone, naturally come to signify all the other g things to which it is now applied. In vestigation he makes many admirable re- and touches with the hand of a master many of the disputable parts of the ques- but he evades the particular point at issue n us and Mr. Knight, by stating, that it e immaterial to his purpose, whether the of colors be supposed to depend on their effect on the eye, or on some association n them and other agreeable emotions, it enough for his purpose that this was pro- the first sort of beauty that was observed, at to which the name was at first exclu- applied. It is evident to us, however, leans to the opinion of Mr. Knight, as beauty being truly sensual or organic. In ing, too, that beauty is not now the name one thing or quality, but of very many nt qualities,—and that it is applied to all, merely because they are often united same objects, or perceived at the same time the same organs,—it appears to us that ries his philology a little too far, and dis- s other principles of reasoning of far authority. To give the name of beauty, ample, to every thing that interests or us through the channel of sight, includ- this category the mere impulse of light pleasant to the organ, and the present- f objects, whose whole charm consists in ing the memory of social emotions, seems to be confounding things together that always be separate in our feelings, and a far greater importance to the mere y of the organ of perception, than is war- either by the ordinary language or ordi- experience of men. Upon the same le, we should give this name of beautiful, o other, to all acts of kindness or magna- , and, indeed, to every interesting occur- which took place in our sight, or came to owledge by means of the eye: nay, as the lso allowed to be a channel for impres- f beauty, the same name should be given to any interesting or pleasant thing that we hear, and good news read to us from the gazette should be denominated beautiful, just as much as a fine composition of music. These things, however, are never called beautiful, and are felt, indeed, to afford a gratification of quite a different nature.

BEAUTY IN THE FINE ARTS. Nothing here has been decided as to the nature and properties of abstract beauty itself, even if such a quality be acknowledged. If an Asiatic artist was to treat this subject, his principle, it is evident, would differ from that of a European. This must not, however, prevent us from studying some principles of beauty, as they are the foundation of the ornamental part of sculpture, painting, and architecture; and govern the proportion of the human figure. Modern artists seem to have implicitly adopted Grecian ideas; which circumstance may account for the prevalence of the antique profile in modern pictures, which is certainly a great inconsistency, when the subjects are chosen from any other than Grecian history; there being one principle of beauty in the form of the Greeks, another in that of the Romans, and another in that of the modern Europeans, and yet they are all beautiful. Professor Camper, in his book upon the different forms of the human cranium, has endeavoured to trace this style of the straight or Grecian profile from a probable source. The projection of the mouth and depression of the forehead, with a flat nose, marks that kind of face which is the nearest allied to the brute creation; there being but one degree between a dog, monkey, ape, ourang-outang, Calmuc, and negro. From the negro to the European countenance are many degrees, which may be traced by an attentive study of the human species; and again, between the best modern faces and those of the antique, there are also many gradations of form and outline. Perhaps from the Greeks observing the resemblance between the lowest class of human countenances and those of monkeys, may be the reason why they conceived beauty to be as far as possible removed from all resemblance to them. As the lower part of the brutal face projected, in such proportion they thought the same position of the human face should recede; and as in the former there was a descent from the forehead to the nose, in the latter it should be perpendicular. As a small space between the eyes gives the appearance of an ape, they made the distance of man wide. As a great breadth of cranium at the eyes, ending above in a narrow forehead, and below in a pointed chin, marked the face of a savage; they gave a squareness of forehead and a breadth of face below, to express dignity of character. Hence, may be the origin of that ideal beauty, which has created so many schisms and feuds in art, and which nothing but a recurrence to nature can rectify. See IDEAL BEAUTY.

BEAUVAIS (Charles and William), two antiquaries. William, born in 1698, was a member of the Literary Societies of Orleans, Cortona, &c.; he published a work on the Medals of the Roman Empire in 3 vols. 12mo. 1767, and died in 1773.

Charles Nicholas was a native of Orleans, where he was born in 1745. He practised physic at Montpelier, and is the author of some Essays on the History and Antiquities of his native city, a Topographical Description of Mount Olivet, and other tracts. His death took place in 1794.

Beauvais (Vincent de), a friar of the Dominican order, was a native of the diocese of Beauvais, in France. Louis IX. supplied him with the means of prosecuting his great work. It is a kind of Encyclopædia, divided into four parts: the first entitled, Speculum Doctrinale, treats of the sciences in general, from grammar to theology; the second Speculum Historiale, contains a summary of general history from the beginning of the world to the year 1254, of which there is a continuation by an anonymous author to 1494; the third part, or Speculum Naturale, relates to physics, or natural philosophy; the fourth, Speculum Morale, is a treatise on vice and virtue. This last part was completed by another hand, Beauvais dying in 1224.

Beauvais, a city of France, the ancient Bellovacum, in the department of the Oise, and late province of the Isle of France, on the Therin. The cathedral is dedicated to St. Peter, and is much admired for its fine architecture, and the extraordinary elevation of the choir. It had formerly a great number of relics, and a curious library. There are twelve other churches. The town was ineffectually besieged by the English in 1443; and by the duke of Burgundy in 1472, with an army of 80,000 men. In this last siege the women signalised themselves by sallying forth against the besiegers, headed by Jeanne Laine, and under a standard which was long after preserved in the church of the Jacobins. There was, before the revolution, a procession on the 10th of July in memory of this exploit. Beauvais was long the capital of Beauvoisis, and the see of a bishop, who was the first of the three ecclesiastical counts and peers of France. At the coronation of the king, he carried the royal mantle. This bishopric was suppressed at the revolution. It is still a fortified town, though commanded by several heights, and contains about 12,800 inhabitants. It has several flourishing manufactures of linen and woollen cloths, calicos, serges, and fine tapestry. From its supposed impregnability, it has obtained the appellation of La Pucelle. Many eminent men have been born here. It is about six leagues from Paris, in lat. 49° 25′ N., and long. 2° 19′ E.

BEAUVILLIERS (Francis de, duke de St. Aignan), was born in 1607, and entered into the army. He distinguished himself in several engagements; on which account Louis XIV. raised him to a dukedom. He was adroit in the direction of the court festivals, and many of his verses are to be found in the works of Madame Deshoulieres, of Scarron, &c. He died in 1687.

Beauvilliers (Paul, duke de), eldest son of the above, was first gentleman of the bedchamber, minister of state, chief of the royal council of finance, and governor of the duke of Burgundy, father of Louis XV. He died in 1714 at the age of sixty-six. This nobleman was distinguished for his cultivated talents and probity of character; as well as for his success in the education of the duke of Burgundy which he shared with the celebrated Fenelon.

Beauvilliers (Paul Hippolitus, duke de St. Aignan), son of the preceding, had the rank of lieutenant-general in the army, the collar of the royal orders, and was a member of the French Academy. He was the author of Amusemens Littéraires, and a Memoir of the Transactions of the Academy of Inscriptions, on the cession made by Andrew Paleologus, of the empire of Constantinople and Trebizond, to Charles VIII. of France.

BEAUVOIR sur Mer, a maritime town of France in the department of La Vendee, and late province of Poitou; twenty-three miles south-west of Nantes. It lies near the sea-coast, opposite the Isie of Noirmoutier, and had formerly the title of marquisate. It contains about 1900 inhabitants, and trades in wood, wool, salt, cattle, and butter.

BEAUVOISIS, a ci-devant territory of France, formerly part of Picardy, and afterwards of the Isle of France. Beauvais was the capital.

BEAUZEE (Nicholas), a French author, born at Verdun in 1717. He became professor of grammar in the military school; and wrote an Universal Grammar, or Exposition of the Elements of Languages, in two vols. 8vo.; an Exposition of the Historical Proofs of Religion, and several other works. Having been elected member of the academy, he wrote the articles relating to grammar for the Encyclopædia; but though he was thus connected with infidels, he was himself a faithful churchman. He once asked Diderot how they came to elect him a member of the academy, being a Christian? Diderot replied, 'Because we had not a grammarian among us, and we considered you an honest man.'

BE'BATHE. Bathe, with the prefix be. See Bathe.

BEBELINGUEN, or **Boblingen**, a town of Germany, in the duchy of Wirtemburg, seated on a lake from which proceeds the river Wurm, ten miles north-west of Stutgard.

BE'BLAST. Blast, with the prefix be. See Blast.

BE'BLED, } Bled and blood, with the pre-
Be'blood. } fix. See both.

BE'BLIND. See Blind.

BE'BLISTER. Blister, with the prefix. See Blister.

BE'BLOT. Blot, and the prefix. See Blot.

BE'BLUBBER. Blubber, with the prefix. See Blubber.

BEBRYCIA, in ancient geography, the name of Bithynia, so called from the Bebryces its inhabitants; who were afterwards driven out by two Thracian nations, the Bithyni and Thyni; from whom, in process of time, the country took the name of Bithynia.

BEC, a town of France, in the department of the Lower Seine, and late province of Normandy, seated on a tongue of land, at the confluence of two rivers.

BECAH, or **Bekah**, a Jewish coin, being half a shekel. In Dr. Arbuthnot's table of reductions, the bekah amounts to 13$\frac{11}{16}$d. In the

ux's computation to 1*s*. 7*d*. Every Is-
paid 100 bekahs a-head annually for the
t of the temple.

CALM, } Calm, and the prefix be.
ALMING. } See Calm. The prefix thus
to give emphasis; to add a syllable in the
to give a ludicrous or endearing force to
m employed.

ANCOUR, a river of Lower Canada,
rises to the south of St. Lawrence, and is
rds increased by several tributary streams.
n easterly course of about forty-six miles,
ges to the north-west for about twenty-
les, and discharges itself into the St. Law-
seven miles below the town of Three

ASSINE, in zoology, a name given to the
minor, or sand-piper.

ASSE, in zoology, a species of woodcock.

CAUSE. Be and cause. Cause being;
eing cause; *because* of his sickness; i. e.
ness is the cause. It formerly also ex-
l the motive or end; but is not now so
It has in some sort the force of a prepo-
But because it is compounded of a
has *of* after it.

> s squiers, which that stoden ther beside,
> sed him *because* of his sikenesse,
> h letted him to done his besinesse. *Chaucer.*

> persecuteth us *bycause* we abase his holy Tes-
> and *bycause*, when we knowe the truth, we
> it not. *Tyndall's Works.*

> se thou hast, though thron'd in highest bliss,
> o God, and equally enjoying
> fruition, quitted all to save
> d from utter loss, and most been found,
> it, more than birthright, Son of God;
> worthiest to be so, by being good,
> re than great or high; *because* in thee
> ath abounded more than glory abounds,
> re thy humiliation shall exalt
> ee thy manhood also to this throne;
> alt thou sit incarnate, here shall reign
> od and Man, for both of God and Man,
> d universal king; all power
> ee; reign for ever, and assume
> rits: under thee as head supreme
> , princedoms, pow'rs, dominions I reduce;
> es to thee shall bow, of them that bide
> en, or earth, or under earth, in hell. *Milton.*

> Why is our food so very sweet?
> *Because* we earn before we eat.
> Why are our wants so very few?
> *Because* we nature's calls pursue.
> Whence our complacency of mind?
> *Because* we act our parts assign'd. *Cotton.*

CCABUNGA, brooklime; the trivial name
ecies of veronica. See Veronica.

CCAFICO, in zoology, a small bird,
so large as the common linnet, and with
rkably short body. Its head, neck, back,
and tail, are of a greenish gray, and in some
nish brown. It feeds on vegetables, berries,
d is common in the north of England,
according to Ray, it is called the petty-

CCARI (James Bartholomew), a physician
gna, was born in 1682. He was professor
mistry at his native city many years, and
ed, in 1729, a Dissertation on the Impurity
of its Air, and in 1730 a Treatise on the Internal Motion of Fluids; &c. He died 1796.

BECCARIA (John Baptist), an ingenious philosopher of the eighteenth century. He was a native of Mondovi in Piedmont, and became professor of philosophy at Palermo, and afterwards at Rome, from whence he removed to Turin. The king of Sardinia had a very great regard for him, and made him tutor to his sons. He made several important discoveries in electricity, and wrote, 1. Experimenta quibus Electricitas Vindex late constituitur, &c. 4to. Turin, 1771. 2. Electricismo Artificiale, 4to, 1772, translated into English, 4to. London, 1776; besides an Essay on the Cause of Storms and Tempests, and several pieces on the Meridian of Turin, &c. He died in 1781.

Beccaria (Bonesana Cæsar, marquis), was born at Milan in 1735, and showed a very early propensity to philosophical subjects. He first studied under the Jesuits at Parma, but left college at seventeen, and became henceforth the director of his own useful researches. His devotedness to the study of Jurisprudence and Political Philosophy, was first determined by the Lettres Persannes of Montesquieu; a production capable, indeed, of alluring a less enthusiastic mind. But his industry appears to have been chiefly stimulated by the patriotic and honorable desire of diffusing instruction among his countrymen, whom he represents as abandoned to ignorance; and who were little prepared for liberal opinions or political science. Fortunately, however, he gained the confidence of Count Firmiani, then governor of that part of the Austrian dominions; a nobleman, who, with comprehensive views of policy, concurred in every plan which was calculated for improving the state of the provinces.

Beccaria's first work appeared in the year 1762, and consisted of Observations on the Derangement of the Currency in the Milanese States. Soon after he established a select literary society at Milan, which, among other distinguished men, included the brothers, Alessandro and Pietro Verri. Assisted by these friends, and patronised by Fermiani, he commenced a periodical published under the name of the Caffe, a plan suggested to them by the celebrity of our English Spectator. But, the most remarkable production to which this association gave rise, and that upon which the reputation of Beccaria was destined chiefly to rest, was the treatise on Crimes and Punishments (Dei Delitti e Delle Pene). This is said to have been undertaken at the earnest solicitation of Count Alexander Verri, who then discharged the functions of Protector of Prisoners (Protettore de' Carcerati) at Milan. It was written at the house of Peter Verri, where the meetings of the society were held; and in concert with him the author, every evening, corrected what he had written during the day. In this manner this celebrated work was completed in two months, and was printed in the course of the year 1764.

The author here breaks up most of the important ground that Sir Samuel Romilly, Bentham, and others, have so well cultivated since: he is everywhere the advocate of reason, sound policy, and humanity; and, by examining the foundation, objects, and consequent boundaries of penal law, he exposes the inefficacy as well as injustice of many provisions in the judicial code of his own country, and in those of other European nations;—provisions only the more pernicious in many cases, as derived from remote times, and perverting our respect for established maxims into the most debasing and servile barbarism. Six Italian editions were immediately called for; and it is computed that it has run through more than fifty editions and translations. As a most important conclusion resulting from this examination, or rather as concentrating a number of his conclusions, he closes his book with the following proposition:—'In order that punishment may not be an act of violence, of one, or of many, against an individual member of society, it is essential that it should be public, prompt, and necessary, the least possible in the given case, and determined by the law.'

The prospects which Beccaria entertained as to the probable influence of his works, appears from the sentence of Lord Bacon, which he prefixed to some of the editions. 'It is not to be expected in any difficult undertaking, of whatever kind, that the same person who sows the seed should also reap the harvest; but there must of necessity, be a preparation and gradual progress to maturity.' 'Never,' says a writer in the Biographie Universelle, 'did so small a book produce so great an effect.' The medal given by the academy of Berne was instantly bestowed upon Beccaria; and the Empress Catharine II. invited him to St. Petersburgh, with the offer of an honorable station at her court; a proposal which was the means of procuring him a similar distinction at home. In 1767 was issued an imperial order for establishing, in the Palatine College at Milan, a Professorship of Public Law and Economics, under the title of Scienze Camerali. To this chair, endowed expressly for him, the marquis was appointed on the 1st of November, 1768, and commenced the duties of it in the month of January following. From the preliminary discourse (prolusione) which he pronounced on this occasion, and in which he sets forth the objects of the institution, it appears that the only instructions which he received on his appointment, consisted in an order to deliver his discourses in the vulgar tongue; an injunction as highly honorable to the government as all the other circumstances of the transaction. His lectures, which he received a special permission to deliver in his own house, attracted much notice. They were not published during his life; but have since appeared, under the title of Elementi di Economia Pubblica, in the compilation of the Scrittori Classici Italiani de Economia Politica, printed at Milan. One of his inferences on this subject is, that 'every restriction on freedom, whether in the case of commerce, or any other, ought to be a result from the necessity of preventing an actual disorder, not the effect of a purpose or aim at amelioration.' And he has repeated the same doctrine under different views, in various passages.

In 1770 he published an Enquiry into the nature of Style, part 1. which he never completed. In the following year he was appointed a member of the Supreme Economic Council; on the suppression of which he was transferred to the Magistracy of State; and, lastly, by a despatch of the 17th of January, 1791, was named one of the Board for Reform of the Judicial Code, civil and criminal. His activity in the discharge of these important trusts is proved by the circumstance, that all the chief matters in those different departments were committed to his direction, or guided by his counsels. The most remarkable of his state papers were, various Ordinances relative to the grain; a very important Despatch transmitted to the Court in 1771, which gave rise to the reform of the public money in 1778; a Plan, proposed in 1780, for effecting an uniformity in the weights and measures; and certain Proposals, in 1786, founded on the tables of the population.

In 1776 the marquis made a journey to Paris, in company with Alessandro Verri, and there passed about three weeks in the society of D'Alembert, and other eminent men of letters: on his return he visited Voltaire. This seems to have been the only incident which, for a period of twenty-five years, diversified his manner of life, or interrupted his public duties. He died of apoplexy in the year 1793, having been twice married. He has the character of having been stedfast in his friendships; modest, but tenacious of his opinions; and much above jealousy or envy in regard to other literary men. It is related of him that the king of Naples, while at Milan, twice attempted to find him at his house; but that the marquis found means on both occasions to escape from his distinguished guest.

BECCLES, a town of Suffolk, seated on the Waveney. It has an elegant church, with a lofty spire; and two free schools, one of them with ten scholarships for Emanuel college, Cambridge. There is a market on Saturday. It lies twelve miles south-west of Yarmouth, and 109 north-east of London.

BE'CHANCE, *v.* & *adv.* Be and chance. See CHANCE.

BE'CHARM. Be and Charm. See CHARM.

BECHER (John Joachim), a celebrated chemist, born at Spires in 1645, and connected with the most learned men in Europe. The emperor, the electors of Mentz and Bavaria, and other persons of high rank, furnished him with the means of making experiments in mathematics, natural philosophy, medicine, and chemistry. He was invited to Vienna, where he contributed greatly to the establishment of several manufactures, a chamber of commerce, and an India company; but the jealousy of the ministers occasioned his disgrace and ruin. He was not less unfortunate at Mentz, Munich, and Wurtzburg; which determined him to go to Haerlem, where he invented a machine for working a great quantity of silk in a little time, and with few hands; but new misfortunes made him come to England, and he died at London in 1685. He wrote, 1. Physica Subterranea, which was reprinted at Leipsic in 1703, and in 1739, in 8vo, with a small treatise, by E. Stahl, entitled Specimen Becherianum. 2. Experimentum Chymicum Novum, 8vo. 3. Character pro Notitia Linguarum Universali. 4.

Institutiones Chymica, seu Manuductio ad Philosophiam Hermeticam, 4to. 5. Institutiones Chymicæ Prodromi, 12mo. 6. Experimentum Novum ac Curiosum de Minera Arenaria Perpetua, &c.

BECHERA, in botany, a genus of plants, class, pentandria; order, digynia: CAL. five-cleft, with a globular tube: COR. five-petalled: CAP. two-celled and bi-valved. The name is derived from the reverend John Becher of Southwell Nottinghamshire, an accurate botanist, to whom the science is indebted for the discovery of the crocus nudiflorus. This plant is a native of Tranquebar.

BECHICS, BECHICHA, among the old physicians, amount to much the same with pneumonics, thoracics, expectorants, and pectorals.

BECHIN, a town and circle of Bohemia, which abounds in salt mines and mineral waters, and particularly the singular mineral called Bechin stone. Bechin, the capital, has an ancient castle. It was taken and burnt by general Bucquoy in 1619, and was often the scene of conflict in the thirty years' war. It is seated on the river Luschintz, fifty miles south by west of Prague.

BECK, *v.* & *n.* } Sax. *becken*, Fr. *bec*, head.
BECK'ING. } To make a sign with the head; a nod of command, or of intimation.

> Bell, book, and candle, shall not drive me back,
> When gold and silver *beck* me to come on.
> *Shakspeare.*
>
> Oh this false soul of Egypt, this gay charm,
> Whose eye *beck'd* forth my wars, and call'd them home. *Id. Antony and Cleopatra.*
>
> Neither the lusty kind showed any roughness, nor the easier any idleness; but still, like a well-obeyed master, whose *beck* is enough for discipline. *Sidney.*
>
> Haste, thee, nymph, and bring with thee
> Quips, and cranks, and wanton wiles,
> Nods, and *becks*, and wreathed smiles. *Milton.*
>
> Then forthwith to him takes a chosen band
> Of spirits, likest to himself in guile,
> To be at hand, and at his *beck* appear. *Id.*
>
> The menial fair, that round her wait,
> At Helen's *beck* prepare the room of state. *Pope.*

BECK, or BEKE, a word which imports a small stream of water issuing from some bourn or spring. The word is chiefly used among us in the composition of names of places originally situated on rivulets; such as Welbeck, Bournbeck, &c. The Germans use beck in the same sense.

BECKET (Thomas), lord chancellor of England, and archbishop of Canterbury in the 12th century. The story of his birth is as extraordinary as that of his life. His father, Gilbert Becket, some time sheriff of London, went on a pilgrimage to Jerusalem, where being surprised and enslaved by a party of Saracens, his master's daughter fell in love with him; and when he made his escape, followed him to London. So singular an instance of heroic affection struck him; and after consulting with some bishops, he baptised her by the name of Matilda, from which marriage proceeded the haughty Thomas Becket. Being raised to the archbishopric, he began the great dispute between the crown and the mitre, and sided with the pope: at which King Henry II. was greatly offended; and calling an assembly of the bishops at Westminster, offered six articles against papal encroachments, which he urged Becket to assent to. Becket, at the importunities of several lords, signed them; but relapsing he was ordered to be tried as a traitor; upon which he fled into Flanders. The king banished all his relations, and Becket excommunicated all his opposers. At last, after seven years, by the intercession of the French king and the pope, he returned; but refused to absolve the bishops and others, whom he had excommunicated: upon this the king grew enraged; and is reported to have said, in the presence of his court, then in Normandy, that he was an unhappy prince, who maintained a great number of insignificant persons about him, none of whom had gratitude, or spirit enough, to revenge him on a single insolent prelate. Hearing these exclamations, four gentlemen of the court started for Canterbury, determined upon assassinating the archbishop. They endeavoured to drag him out of the cathedral, but finding they could not do this without difficulty, they beat out his brains there, on the pavement: 29th of December, 1171. The assassins being now afraid they had gone too far, durst not return to the king's court, but retired to Knaresborough in Yorkshire, and at length took a voyage to Rome; where, being admitted to penance by Alexander III., they went to Jerusalem; and, according to the pope's order, spent their lives in penitential austerities. In the mean time, king Henry was, or affected to be, much disturbed at the news of Becket's death, and despatched an embassy to Rome to clear himself from the imputation of being connected with it. Immediately all divine offices ceased in the church of Canterbury, for a year, excepting nine days; at the end of which, by order of the pope, it was reconsecrated. Two years after, Becket was canonised; and the two following years, Henry returned to England, went to Canterbury, where he did penance, as a testimony of his regret for the murder of Becket. When he came within sight of the church where the archbishop was buried, he alighted off his horse, and walked barefoot, in the habit of a pilgrim, till he came to the tomb. Here, after he had prostrated himself, and prayed for a considerable time, he submitted to be scourged by the monks, and passed all that day and night without refreshment, kneeling upon the bare stone. In 1221 Becket's body was taken up, fifty years after his murder, in the presence of Henry III. and a great concourse of the nobility, and deposited in a rich shrine, erected at the expense of Stephen Langton, archbishop of Canterbury. This was soon visited from all parts, and enriched with the most costly gifts and offerings: the miracles said to be wrought at his tomb were so numerous, that Gervase of Canterbury tells us, two large volumes, recounting them, were kept in the church. The monks used to raise his body every year; and the day on which this ceremony was performed, which was called the day of his translation, was a general holiday: every fiftieth year a jubilee was celebrated to his honor, which lasted fifteen days: plenary indulgences were then granted to all that visited his tomb; and 100,000 pilgrims have been registered at a time in Canterbury. The devotion towards him had almost effaced in this town the adoration of the Deity; nay, even that of the Virgin. At God's altar, for instance, there were offered in one year £3 2s. 6d.; at the Virgin's, £63 5s. 6d.; and at St. Thomas's £832 12s. 3d. But next year the disproportion was still greater: there was not a penny offered at God's altar; the Virgin's gained only £4 1s. 8d.; but St. Thomas's had for its share £954 6s. 3d. Louis VII. of France made a pilgrimage to this miraculous tomb, and bestowed on the shrine a jewel, which was esteemed the richest in Christendom. Henry VIII., to whom it may easily be imagined how obnoxious a saint of this character would appear, not only pillaged St. Thomas's rich shrine, but made the saint himself be cited to appear in court, and be tried and condemned as a traitor. He ordered his name to be struck out of the calendar; the office for his festival to be expunged from all breviaries; and his bones to be burnt, and the ashes thrown in the air. From Thomas Warton we learn, that Becket was the subject of poetical legends. The Lives of the Saints in verse, in Bennet's library, No. CLXV. contain his martyrdom and translation. This MS. is supposed to have been written in the fourteenth century. The same writer informs us, from Peter de Blois, that the palace of Becket was perpetually filled with bishops highly accomplished in literature, who passed their time there in reading, disputing, and deciding important questions of the state. These prelates, though men of the world, were a society of scholars; yet very different from those who frequented the universities, in which nothing was taught but words and syllables, unprofitable subtleties, elementary speculations, and trifling distinctions. De Blois was himself eminently learned, and one of the most distinguished ornaments of Becket's attendants. We know that John of Salisbury, his intimate friend, the companion of his exile, and the writer of his life, was scarcely exceeded by any man of his time for his knowledge in philological and polite literature.

BECKETS, in the marine, large hooks, or circular wreaths of rope, or wooden brackets, used to confine ropes, tackles, oars, or spars, in a convenient place till they are wanted. And to put the tacks and sheets in the beckets, is to hang up the weather-main and fore-sheet, and the lee-main and fore-tack, to a little knot and eye-becket on the fore-mast, main, and fore-shrouds, when the ship is close hauled, to prevent them from hanging in the water.

BECKINGHAM (Charles), an English dramatic writer, the son of a linen draper in London, was born in 1669; and educated under the learned Dr. Smith. He early discovered an uncommon genius in poetry, two dramatic pieces of his writing being represented on the stage before he was twenty years old. The titles of these plays are, 1. Henry IV. of France; 2. Scipio Africanus. He wrote, also, several other poems, and died 18th Feb. 1730, aged thirty-two.

BECKMANN (John), forty-four years professor at Gottingen, a native of Hoya, in the electorate of Hanover, and born in 1739. His father was a post-master and receiver of taxes. His mother became a widow when Beckmann was hardly seven years old, and, though left in narrow circumstances, sent him, in his fifteenth year to the school of Stade, then under the care of Gehlen. In 1759 he repaired to Gottingen, to study for the church, but quitted it, and this design together, at his mother's death, in 1762, to fill the situation of professor of natural philosophy in the Lutheran academy at St. Petersburgh. Beckmann soon gave up this place, and made a journey through Sweden to acquire a detailed knowledge of its mines. Linnæus receiving him hospitably at Upsal, he prolonged his stay there. In 1766 the governors of the university of Gottingen appointed him, on the recommendation of Busching, professor to this celebrated establishment, of which he became one of the chief ornaments. His mind, now entirely directed to the practical uses of human knowledge, conceived the idea of an academical classification of the arts, both political and domestic. He therefore composed, as a guide, to serve him in this course of instruction, Treatises on Rural Economy—On Policy—On Finance—On Commerce, and other departments of practical knowledge; and his lectures, which had at the time the recommendation of novelty, were attended by the flower of the youth of the most civilised nations of Europe. He was in the habit of accompanying them to the workshops, to give them a knowledge of the different processes and handicrafts. His notices on these subjects make five volumes in octavo, published at Leipsic from 1783 to 1805; and will furnish the most invaluable materials to the individual, or to any society who may hereafter venture to undertake the general history of the origin and progress of the mechanic arts. Great merit, also, belongs to his History of the earliest Voyages made in modern times; of which he lived only to publish eight numbers. Another result of the literary application of the industry of Beckmann was a return to the studies of humanity, to which we are indebted to him, likewise, for editions of the work De Mirabilibus Auscultationibus, attributed to Aristotle, 1786; of the Wonderful Histories of Antigonus Carystius, 1711; and of Marbodius's Treatise on Stones, 1799; publications which required the rare union of physical knowledge and sagacity with philological learning. The Royal Society of Gottingen had, in the year 1772, admitted him one of its members, and, from that period to 1783, Beckmann supplied their proceedings with several interesting memoirs, among which are: On the Reduction of Fossils to their Original Substances—On the History of Alum—On the Sap of Madder—On the froth of the Sea, from which the Heads are formed for the Nicotian Fistulæ—On the History of Sugar. Beckmann died, 3rd of February, 1811, a member of almost all the learned societies of Germany and the north of Europe.

BECK'ON, *v.* & *n.* See to BECK.

> Thou blinded god, quoth I, forgive me this offence,
> Unwittingly I went about to malice thy potence.
> Wherewith he gave a *beck*, and thus methought he
> swore,

Thy sorrow ought suffice to purge thy fault, if it were more;
The virtue of which sound mine heart did so revive,
That I methought was made as whole as any man alive. *Earl of Surrey.*

For he that will be called with a *beck*,
Makes hasty suit on light desire,
Is ever ready to the check,
And burneth in no wasting fire. *Wyatt.*

Proceeding to the midst he stil did stand,
As if in mind he something had to say;
And to the vulgare *beckning* with his hand,
In sign of silence, as to heare a play,
By lively actions he gan bewray,
Some argument of matter passioned;
Which doen, he backe retyred soft away,
And, passing by, his name discovered,
Ease, on his robe in golden letters cyphered.
Spenser.

It *beckons* you to go away with it,
As if it some impartment did desire
To you alone. *Shakspeare.*

The queen, fair Fancy, past;
And thro' her rainbow-tinged veil
A glance benignant cast!
Then, *beck'ning* to a secret glade,
'Come see,' she cried, 'the train,
Who own beneath this mystic shade
My visionary reign.' *Bishop.*

Anon all this rout was brought in silence,
And I by an usher brought to presence
Of Lucifer; then low, as well as I could,
I kneeled, which he so well allow'd
That thus he *beck'd*, and, by St. Anthony,
He smiled on me well-favour'dly.
Heywood. The Pardoner.

So throng into the memory,
Of calling shapes, and *beckoning* shadows dire,
And aery tongues, that syllable men's names,
On sands and shores and desert wildernesses.
Milton.

With this his distant friends he *beckons* near,
Provokes their duty, and prevents their fear. *Dryden.*

What *beck'ning* ghost along the moonlight shade,
Invites my steps and points to yonder glade. *Pope.*

When he had raised my thoughts by those transporting airs, he *beckoned* to me, and, by the waving of his hand, directed me to approach. *Addison.*

All ether softening, sober evening takes
Her wonted station on the middle air,
A thousand shadows at her *beck*. First, this
She sends on earth, then that of deeper dye
Steals soft behind; and then a deeper still,
In circle following circle, gathers round,
To close the face of things. *Thomson. Summer.*

They had not spoken; but they felt allured
As if their souls and lips each other *beckon'd*,
Which being join'd like swarming bees they clung,
Their hearts the flowers from whence the honey sprung. *Byron.*

BE'CLAP. Be and clap. See CLAP.

BE'CLAWE. Be and claw. See CLAW.

BE'CLIP. Be and clip. See CLIP.

BE'CLOUD. Be and cloud. See CLOUD.

BE'COME,
BECOM'ING, *n. adj.*
BECOMING'LY.
} *Be* and *come*, Anglo-Sax. *cuman*; Dutch *komen*; Germ. *kommen*; Swed, *komma*. *Becuman*, *ingredi*, *occurrere*, *pervenire*, *supervenire*; to go; to enter in; to meet with; to come or attain to; to come upon suddenly: it likewise signifies to convene; to concur; and consequently to be convenient or concurrent; hence arises to befit; decent; appropriate; suitable; and further, graceful; ornamental. See ENCY. MET.

The Lord God breathed into his nostrils the breath of life, and man *became* a living soul. *Genesis*, ii. 7.

And unto the Jews I *became* a Jew, that I might gain the Jews. 1 *Corinth.* ix. 24.

Upon that other side Damian
Becomin is the sorwefullest man
That ever was. *Chaucer.*

So soone as she was entred, round about
Shee cast her eies, to see what was *become*
Of all those persons which she saw without:
But lo! they streight were vanisht all and some;
Save that same woefull lady; both whose hands
Were bounden fast, that did her ill *become*,
And her small waste girt rownd with yron bands
Unto a brasen pillour, by the which she stands.
Spenser.

She to her sire made humble reverence,
And bowed low, that her right well *became*,
And added grace unto her excellence.
Id. Faerie Queene.

I cannot joy, until I be resolv'd
Where our right valiant father is *become*.
Shakspeare

If I *become* not a cart as well as another man, a plague on my bringing up. *Id.*

I would I had some flowers o' th' spring that might
Become your time of day; and your's and your's,
That wear upon your virgin branches yet
Your maidenheads growing. *Id.*

Yet be sad, good brothers;
For, to speak truth, it very well *becomes* you. *Id.*

Your dishonour
Mangles true judgment and bereaves the state
Of that integrity which should *become* it. *Id.*

What is then *become* of so huge a multitude, as would have overspread a great part of the continent.
Raleigh

But I should ill *become* this throne, O peers!
And this imperial sovreignty adorn'd
With splendour, arm'd with power, if aught propos'd
And judg'd of public moment, in the shape
Of difficulty or danger, could deter
Me from attempting. *Milton.*

Perplex'd with thoughts, what would *become*
Of me, and all mankind? *Id.*

The first hints of the circulation of the blood were taken from a common person's wondering what *became* of all the blood that issued out of the heart.
Graunt.

What will *become* of me then? for, when he is free, he will infallibly accuse me. *Dryden.*

Why would I be a queen? because my face
Would wear the title with a better grace;
If I *became* it not, yet it would be
Part of your duty then to flatter me. *Id.*

Wicherly was of my opinion, or rather I of his· for it *becomes* me so to speak of so excellent a poet.
Id.

Their discourses are such as belong to their age their calling, and their breeding; such as are *becoming* of them, and of them only. *Id.*

What *became* of this thoughtful busy creature, when removed from this world, has amazed the vulgar, and puzzled the wise. *Rogers*

He utterly rejected their fables concerning their gods, as not *becoming* good men, much less those which were worshipped for gods. *Stillingfleet.*

Of thee, kind boy, I ask no red and white
To make up my delight,
No odd *becoming* graces,
Black eyes, or little know-not-whats in faces.
Suckling.

BECSANGIL, the ancient Bithynia, a province of Natolia in Asia; bounded on the north by the Black Sea, on the west by the sea of Marmora, on the south by Natolia Proper, and on the east by the province of Boli. The principal town is Bursa.

BECSKERECK, NAGY, i. e. GREAT, a market town of Hungary, in the county of Torontal, the capital of the circle of that name. It stands on the Bega, and has a salt office, and the right of choosing its own magistrate.

BECSKERECK, KIS, i. e. LITTLE, a small town of Hungary, in the county of Temeswar, circle of St. Andrew.

BECTASH, preacher to Amurath I. sultan of the Turks, and founder of the sect of Bectasse. He is also said to have given rise to the order of Janissaries.

BECTASSE, a sect of religious among the Turks. All the janissaries belonging to the Porte are of this sect. The habit of the bectasse is white: on their heads they wear caps of several pieces; with turbans of wood twisted like ropes. They observe constantly the hour of prayer, which they perform in their own assemblies, and make frequent declarations of the unity of God.

BECURL, *be* and *curl*. See CURL.

BED, *v.* & *n.*
BED'DING,
BED'CHAMBER,
BED'CLOTHES,
BED'FELLOW,
BED'MAKER,
BED'MATE,
BED'POST,
BED'STAFF,
BED'PRESSER,
BED'STEAD,
BED'STRAW,
BED'SWERVER,
BED'RID,
BED'RITE,
BED'TIME,
BED'WARD,
BED'WORK.

A large family, from one etymon; Ang. Sax. *beddian*; Germ. *bedden* or *betten*, *sternere*, bed; that is, says the etymologist, in the Ency. Met., *stratum*, is the past participle of this verb; therefore we speak of a garden-bed, a bed of gravel, &c. In the Ang.-Sax. *bedde* is sometimes used for a table. See Mark iv. 21. From the strata of earth where things are deposited, &c., and in which, till disturbed, they repose; the word has been to whatever bears applied and supports; to whatever is spread, or laid out, or prepared, for the purpose of bearing and supporting. Thus it is more generally applied to a lodging; to something made to sleep on; hence, figuratively, it is used for marriage. To *bed* is to go to bed with; to place in bed; to make partaker of the bed; to sow or plant in earth; to lay in a place of rest or security; to lay in order; to stratify; to cohabit. The various derivatives explain, by their application, their own meaning.

To *bed* he goth, and with him goth his wife,
As any jay she lyht was and jolif. *Chaucer.*

Flora now culleth forth eche flower,
And bids make readie Maia's bower,
That newe is upryst from *bedd.* *Spenser.*

There be no inns where meet *bedding* may be had, so that his mantle serveth him then for a *bed.* *Id.*

On my knees I beg,
That you'll vouchsafe me raiment, *bed*, and food.
Shakspeare.

ENO. Mine, and most of our fortunes, to night, shall be—drunk to *bed.* *Dryden, Ant. and Cleop.*

IROS. There's a palm, presages chastity, if nothing else.

CHAR. Even as the overflowing Nilus presageth famine.

IROS. Go, you wild *bedfellow*, you cannot soothsay. *Id.*

And as the sleeping soldiers in th' alarm,
Your *bedded* hairs, like life in excrements,
Start up and stand on end. *Id.*

She's a *bedswerver*, even as bad as those
That vulgars give the boldest titles to. *Id.*

They have married me:
I'll to the Tuscan wars, and never *bed* her. *Id.*

For he will be swine drunk, and in his sleep he does little harm, save to his *bedclothes* about him. *Id.*

He loves your people,
But tie him not to be their *bedfellow.* *Id.*

Misery acquaints a man with strange *bedfellows.* *Id.*

This sanguine coward, this *bedpresser*, this horseback breaker, this huge hill of flesh. *Id.*

Lying not erect, but hollow, which is in the making of the *bed*; or with the legs gathered up, which is in the posture of the body, is the more wholesome.
Bacon.

There was a doubt ripped up, whether Arthur was *bedded* with his lady. *Id.*

Herbs will be tenderer and fairer if you take them out of *beds* when they are newly come up, and remove them into pots with better earth. *Id.*

She was publickly contracted, stated as a bride, and solemnly *bedded*; and, after she was laid, Maximilian's ambassador put his leg, stript naked to the knee, between the espousal sheets. *Id.*

Let coarse bold hands, from slimy nest,
The *bedded* fish in banks outwrest. *Donne.*

So high as heav'd the tumid hills, so low,
Down sunk a hollow bottom, broad, and deep,
Capacious *bed* of waters. *Milton.*

Rigour now is gone to *bed*,
And advice with scrupulous head. *Id.*

George, the eldest son of this second *bed*, was, after the death of his father, by the singular care and affection of his mother, well brought up. *Clarendon.*

He was now one of the *bedchamber* to the prince. *Id.*

They were brought to the king, abiding them in his *bedchamber.* *Hayward.*

First, with assiduous care from winter keep,
Well fother'd in the stalls thy tender sheep;
Then spread with straw the *bedding* of thy fold,
With fern beneath, to fend the bitter cold. *Dryden.*

Arcite return'd, and, as in honour tied,
His foe with *bedding* and with food supply'd. *Id.*

Those houses then were caves, or homely sheds,
With twining oziers fenc'd, and moss their *beds.* *Id.*

See hoary Albula's infected tide
O'er the warm *bed* of smoaking sulphur glide.
Addison.

What charming *bedfellows*, and companions for life, men choose out of such women. *Id.*

I was deeply in love with my *bedmaker*, upon which I was rusticated for ever. *Id. Spectator.*

I came the next day prepared, and placed her in a clear light, her head leaning to a *bedpost*, another standing behind, holding it steady.
Wiseman's Surgery.

Chimnies with scorn rejecting smoke;
Stools, tables, chairs, and *bedsteads* broke. *Swift.*

Bed may be more accurately defined a convenience for stretching and composing the body on, for ease, rest, or sleep; consisting, generally, of feathers enclosed in a ticken case, and supported by a frame work, called the bedstead, standing on pedestals. Mr. Whittaker in his history of Manchester observes, that it was universally the practice, in the first ages, for mankind to sleep upon the skins of beasts. It was originally the custom of the Greeks and Romans, as well as of the ancient Britons, before the Roman Invasion. These skins were spread on the floor of their apartments. Afterwards they were changed for loose rushes and heather: the Welsh a few years ago lay on the former, and many of the Highlanders of Scotland sleep on the latter to this day. In process of time, the Romans suggested to the interior Britons the use, and the introduction of agriculture supplied them with the means, of the neater convenience of straw beds. The beds of the Roman gentry at this period were generally filled with feathers, and those of the inns with the soft down of reeds. But for many ages the beds of the Italians had been constantly composed of straw; it still formed those of the soldiers and officers at the conquest of Lancashire; and from both, our countrymen learnt their use. But it appears to have been taken up only by the gentlemen, as the common Welsh had their beds thinly stuffed with rushes as late as the conclusion of the twelfth century; and with the gentlemen it continued many ages afterwards. Straw was used even in the royal chambers of England as late as the close of the fifteenth century.

In the Highlands heath is generally used as bedding even by the gentry; and a heath bed has been celebrated by travellers as a peculiar luxury, superior to that of down. In France and Italy straw beds are frequent to this day. But after the above period, beds were no longer suffered to rest upon the ground. The better mode, that had anciently prevailed in the east, and long before been introduced into Italy, was adopted in Britain; and they were now mounted on pedestals. This, however, was equally confined to the higher ranks. Beds still continued on the floor among the common people, and were laid along the walls of their houses, as one common dormitory for all the members of the family.

Bed, in masonry, a course or range of stones; and the joint of the bed is the mortar between two stones, placed over each other.

Bed, in sea language, a flat, thick piece of timber laid under the quarters of casks containing any liquid, and stowed in the ship's hold.

Bed, Dining, lectus triclinaris, or discubitorius, that whereon the ancients lay at meals. The dining or discubitory beds were four or five feet high. Three of these were ordinarily ranged by a square table (whence both the table and the room where they eat, were called triclinium), in such a manner that one of the sides of the table remained open and accessible to the waiters. Each bed would hold three or four, rarely five persons. They were unknown in Rome before the second Punic war: the Romans, till then, sat down to eat on plain wooden benches, in imitation of the heroes of Homer, or, as Varro expresses it, after the manner of the Lacedemonians and Cretans. See Accubation.

Bed of a great Gun; that thick plank which lies immediately under the piece, being, as it were, the body of the carriage.

Bed of a Mortar, with gunners, a solid piece of oak hollowed in the middle, to receive the breech and half the trunnions.

Bed of Corn, is a heap, flat at top, three or four feet high, otherwise called a couch. Corn, in granaries, keeps best in beds.

Bed of Justice, in the ci-devant French customs, a throne upon which the king was seated when he went to the parliament. The king never held a bed of justice but for affairs that concerned the state, and then all the officers of parliament were clothed in scarlet robes.

BEDA, commonly called Venerable Bede, one of our most ancient historians, was born A. D. 672, near Weremouth, in the bishopric of Durham. He was educated by the abbot Benedict, in the monastery of St. Peter, near the mouth of the river Wyre. At the age of nineteen he was ordained deacon, and priest at thirty. About this time he was invited to Rome by Pope Sergius; but it is not certain that he accepted the invitation. In 731 he published his Ecclesiastical History; a work of so much merit, notwithstanding the legendary tales it contains, that it were alone sufficient to immortalise the author. He died A. D. 735, of a lingering consumption, probably occasioned by a sedentary life, and long uninterrupted application to study and literary compositions, of which he left an incredible number. He was buried in the church of his convent at Jarrow; but his bones were afterwads removed to Durham, and deposited in the same coffin with those of St. Cuthbert. Bede was undoubtedly a singular phenomenon in an ignorant and illiterate age. His learning, for the times, was extensive, his application incredible, his piety exemplary, and his modesty excessive. He was universally admired, consulted, and esteemed, during his life; and his writings are deservedly considered as the foundation of our ecclesiastical history. His language is neither elegant nor pure, but perspicuous and easy. All his works are in Latin. The first general collection of them appeared at Paris in 1544, in three volumes, folio. They were printed again at the same place in 1554, in eight volumes. They were also published in the same size and number of volumes at Basil, in 1567, reprinted at Cologne in 1613, and at the same place in 1688. Besides this general collection, there are several of his compositions, which have been printed separately, or amongst the collections of the writings of ancient authors; and there are several MSS. ascribed to him, which are preserved in the libraries of Oxford and Cambridge.

BE'DABBLE. Dabble, with the prefix be. See Dabble.

BE'DAFF. Daff, and the prefix be. See Daff.

BE'DAGGLE. Daggle, and the prefix be See Daggle.

BEDAH, or Vedah, also called Battas or Waddas, a wild people inhabiting the mountains and forests in the interior of Ceylon. See Ceylon and Batta.

color, by which it is easily distinguished.

BEDAMUNGALUM, a town of the Mysore, Hindostan, near the river Palar, which is here about forty feet wide. It was formerly a considerable place, but is now reduced. Salt abounds throughout the neighbouring country, which consists of poor black soil, and low wet grounds. Long. 78° 24′ E., lat 12° 58′ N.

BEDAN, a deliverer, and, probably, a judge of the Israelites, mentioned by the prophet Samuel (1 Sam. xii. 11.), in his expostulation with the people; but not mentioned particularly elsewhere, in Scripture. Some suppose him to be the same with Barak; others with Samson, who was Ben Dan, the son of Dan; others, that he was Jair, and named Bedan after his ancestor.

BEDARIDES, a town of France, near the Rhone, formerly in the papal county of Venaissin; but, since the revolution, included in the department of Vaucluse. The population is about 1700, and the environs are fertile and beautiful. Five miles north of Avignon.

BE'DARK. Be and dark. See Dark.

BEDARRIEUX, or Bec du Rieux, a town of France, on the river Orbe, in the department of the Herault. It has 3340 inhabitants, with manufactures of drugget and woollen stuffs, which are exported as far as into Germany. Thirty-three miles west of Montpelier. Long. 3° 15′ E., lat. 43° 57′ N.

BE'DASH Be and dash. See Dash.

BE'DAW. Of uncertain etymology. Awake on the watch. See Adaw, to watch over, to keep under.

BE'DAUB. Be and daub. See Dabble and Daub.

Bedchamber, Lords of the, in the British court, are twelve noblemen who attend in their turns, each a month; during which time they anciently lay in the king's bedchamber, and waited on him when he dined in private.

BEDDAPOLLAM, a town of Hindostan, in the Mysore, fourteen miles west of Gurramconda.

BEDDER, Beder, or Bedr, a valley of Arabia, where the tribe of Koreish was defeated by Ma-

reputation. He was capable of g
aimed at too much. Publications
of subjects political, scientific, and
from his pen in rapid succession, u
he was seized with a liver complaint
fatal in the course of that year. O
works, the principal are; 1. A
Spallanzani's Dissertations on N
1784; reprinted in 1790. 2. A
Bergman's Essay on Elective Attr
3. Translations of Scheele's Che
1786. 4. Chemical Experiments
extracted from a work published i
tury, &c.

BEDE. See Beda.

BE'DEAD. Be and dead. S

BE'DECK. Be and deck. S

BEDELL (Dr. William), a le
born at Black Notley, in Essex,
educated at Emanuel College, Can
he obtained a fellowship in 1593
some time minister of St. Edmu
went to Venice, as chaplain to Si
ton, the English ambassador, and c
years in that city, contracted a
quaintance with the famous Father
this time he translated the Engl
Prayer Book into that language;
an English grammar for Father
clared he had learned more from h
than from any one. At his depar
sented him with his picture, the
History of the Council of Trent,
the Interdict and Inquisition, with
donations. In 1629 Dr. Bedell
bishopric of Kilmore and Ardag
and applied himself vigorously
abuses. He procured an Irish tra
common Prayer-Book, which he
read in his cathedral every Sunday
Testament having been translated
Daniel, he patronised a correspo
of the Old Testament; which w
printed at the expense of the gre
In 1624 he published a controversia
the Roman Catholics, which he

out of Ireland. About the middle of December, however, the rebels required him to dismiss the people who had taken refuge with him; and, upon his refusing to do this, they seised him and his family, and carried them prisoners to the castle of Cloughboughter, putting them all except the bishop in irons. After being confined for about three weeks, the bishop and his sons were exchanged for some of the principal rebels; but the worthy prelate died soon after, on the 7th February, 1642, his death being chiefly occasioned, it is said, by this imprisonment. The Irish rebel chiefs, and a large part of their force, accompanied his body to the churchyard.

BE'DELVE,
Be'delven. } Be and delve. See Delve.

BEDENGIAN, in botany, a name given by Avicenna and Serapion to the pomum amoris, or love-apple, a sort of fruit used in food by the Italians, and some other nations, and seeming to be the third species of the strychnos, or solanum, mentioned by Theophrastus. The author first describes two kinds of this plant, the one of which occasioned sleepy disorders, and the other threw people who eat of it into madness. After these, which he properly accounts poisonous, he mentions a third, which was cultivated in gardens, for the sake of the fruit, which, he says, is large and esculent. This is certainly the same with bedengian.

BE'DEVIL. Be and devil. See Devil.

BE'DEW,
Be'dew. } Ang.-Sax. *deawian*, to wet, to moisten.

Both nations shall, in Britaine's royal crowne,
Their diff'ring names, the signes of faction, drowne;
The silver streames which from this spring increase,
Bedew all Christian hearts with drops of peace.
Beaumont. Bonworth Field.

For never, gentle knight, as he of late,
So tossed was in fortune's cruell freakes,
And all the while salt tears *bedeaw'd* the hearers' cheaks. *Spenser.*

What slender youth *bedew'd* with liquid odours,
Courts thee on roses, in some pleasant cave? *Milton.*

Thrice happy he! who, on the sunless side
Of a romantic mountain, forest-crown'd,
Beneath the whole collected shade reclines;
Or in the gelid caverns, woodbine wrought,
And fresh *bedew'd* with ever-spouting streams,
Sits coolly calm. *Thomson.*

May all the youths, like me, by love deceiv'd,
Not quench the ruin, but applaud the doom!
And when thou dy'st, may not one heart be griev'd,
May not one tear *bedew* the lonely tomb! *Hammond.*

Go, my boy, and if you fall, though distant, exposed, and unwept by those that love you, the most precious tears are those with which heaven *bedews* the unburied head of a soldier
Goldsmith. Vicar of Wakefield.

BEDFORD (John, duke of), a younger son of Henry IV., was Shakspeare's 'prince John of Lancaster.' During the reign of Henry V. he took a leading part in the conquest of France; and was, after the death of the king, appointed regent of that country. He displayed great military skill in the battle of Verneuil in 1424. The only blemish in his character is his cruel and unjustifiable treatment of the maid of Orleans. He survived this event about four years, and dying at Rouen, in 1435, was buried in the cathedral of that city. Bedford deserves notice as a patron of the arts. A curious proof of his taste in them is still existing in the Bedford Missal a small thick folio volume, highly illuminated, described by Mr. Dibdin in his Bibliomania, page 253.

The dukedom of Bedford, now enjoyed by the Russel family, is perfectly distinct from that of this prince. The title has been twice revived since his time.

Bedford (Francis Russel, duke of), an illustrious English nobleman, and distinguished agriculturist; was born July 23d, 1765. Upon the death of his grandfather in 1771, he succeeded to the title and fortunes of his family. He received the first rudiments of education, we believe, at Loughborough house, a fashionable preparatory school: from this place he was removed at an early age to Westminster-school, but he did not remain long at this celebrated seminary. Here it was that, in consequence of a blow from a cricket ball, he became subject to an inveterate hernia, which proved the ultimate cause of his premature death. His grace, at the university, applied to his studies with more diligence than most young noblemen, and soon acquired the esteem of his fellow-students, and of those who superintended his conduct. Early in life he manifested a strong predilection for the amusements of the turf, but this was soon weakened (though not destroyed) in consequence of a superior attachment to the more rational pursuits of agriculture. On his first outset in public life he was connected with Mr. Fox, and became a firm and disinterested supporter of the whig principles. It was long before he could so far overcome his natural diffidence as to speak in public; although, in private company, the clearness of his judgment, the solidity of his remarks, and the strength and accuracy of his expression, had decidedly proved that his grace possessed the chief requisites of a distinguished orator. What the persuasions of his friends could not effect, was at length unexpectedly produced by a momentary glow of indignation. In a debate in the house of lords, the duke imagined himself personally alluded to by one of the speakers. He rose and defended himself and his party by a most able and animated reply. From that period he occasionally spoke upon the most important questions that divided the house, and was constantly heard, even by his political adversaries, with the most respectful attention. His eloquence was rather solid and masculine than brilliant and showy; he did not trim up his language with the gaudy flowers of the rhetorician, but always spoke with such accuracy, and dignity of style and manner, as naturally resulted from the profound meditation of an enlarged and cultivated mind.

But the duke of Bedford was not merely eminent as an orator and politician; he deserved much regard as an anxious promoter of agriculture, and every art subservient to that highly important pursuit. The late Mr. Bakewell was one of his first instructors in the knowledge of cattle; but he soon equalled, if not excelled, his master, at least in a knowledge of the subject, though not perhaps in success as an improver of the different breeds. His improvements in farming, as well as grazing, were very considerable. His experimental farm consisted of about 3000 acres, and it was in a state of cultivation, before his time, unexampled in this country. In the practice of irrigation his grace was remarkably successful, and he evinced its wonderful effects upon several hundred acres of land. The farmers and graziers for miles round his family seat at Woburn will long remember his grand annual sheep-shearings held there; from which every one returned pleased with the hospitality and affability of the noble duke, and with the prospect of advantage to the agricultural interests of the nation at large, which the premiums here offered were likely to produce. His grace was never married. His death was occasioned by the strangulation of the hernia already spoken of; which was brought on by playing at tennis. He died March 2d, 1802, in his thirty-seventh year.

Bedford, the chief town of Bedfordshire, is a place of great antiquity, supposed to be an ancient Roman station, and by some the Lactidorum of Antoninus; although Camden is of a different opinion, from the fact of its not standing on any of the Roman roads, as also from no Roman coins having been found in the immediate vicinity. It is situated on the river Ouse, ten miles from Olney, and fifty miles north of London; and, according to the census of 1821, contains upwards of 1070 houses, and 5466 inhabitants.

Bedford is supposed to be the Bedicanford of the ancient Saxons, called Bedician Forda, fortress of the Ford, from its fortifications, which commanded the river, and rendered the place almost impregnable. Several ancient battles were fought here, between the Britons and the Saxons, particularly one in 572, the obstinacy of which has been justly celebrated. It has also been the scene of many severe and bloody conflicts with the Danes, and of many other changes and remarkable events, since the extinction of the Danish power. Offa, king of the Mercians, chose this town as his burial place, and his remains were accordingly interred in a small chapel, on the brink of the river; but both the royal deposit and the chapel containing them have been long swept away by a violent inundation. Shortly after the Norman conquest, William Rufus gave the barony of Bedford to Pain de Beauchamp, who built a strong castle, adjoining the town. This place, in 1137, stood a siege against king Stephen and his army, and was afterwards committed to Faux de Brent, a royal favorite. But this gentleman, having fortified it strongly, set the royal power at defiance, and having otherwise rendered himself obnoxious to Henry III. the king, in 1224, marched with an army to reduce him to obedience; and after a siege of two months, which forms one of the most curious details in English history, the place was stormed by four assaults, and taken, the castle was dismantled, the trenches filled up, and of the site on which it stood only a few traces are now visible. Before the conquest, here was a collegiate church, dedicated to St. Paul, which was afterwards removed to the parish of Goldington, about a mile distant. Numerous other religious houses, in the town and suburbs, were founded at an early period, of which scarcely any vestiges remain. A bridge of great antiquity stood over the river, which is hence navigable to the German Ocean; but that edifice being in a state of great decay, was removed in 1813, and a new and handsome one was erected on its site, preserving the communication between the northern and southern divisions of the town. Bedford is generally considered a compact, handsome place, containing the parishes of St. John, St. Mary, St. Cuthbert, St. Peter, and St. Paul. It is governed by a mayor, recorder, aldermen, two chamberlains, and thirteen common council men. It gives the title of duke to the family of Russel, and, as early as 1295, sent two members to parliament, the election of whom is vested in about 1400 voters, consisting of burgesses, freemen, and householders not receiving alms. The town is a borough and corporation by prescription, and the earliest charter is dated in 1166, 100 years after the conquest. Of the five churches three are on the north side of the river, and two on the south. St. Paul's is a very handsome Gothic edifice with a spire. It has a fine organ, a very ancient stone pulpit, and contains an altar tomb with brass figures of Sir William Harpur and his lady, the former of whom, a great benefactor of the town, died in 1574. The dissenters in Bedford are numerous and respectable. There are three Independent chapels, one of which was built as early as 1707, and a second in 1772. The celebrated John Bunyan was one of the pastors of the original meeting-house, which preceded both, from 1671 to 1688, and during the thirty-two years exercise of his ministry in that place and the neighbourhood, suffered twelve years imprisonment, in the course of which he finished his celebrated work entitled The Pilgrim's Progress. A free grammar school was founded here in 1556, by Sir William Harpur, a native of Bedford, who, in the sixteenth century, was elevated to the dignity of lord mayor of London. It was endowed with thirteen acres of land, which, being now let for building, produces an improved rent of £6000 per annum, the surplus of which is applied to other purposes of a charitable nature; £700 is given in small premiums for the apprenticing of children, and £800 is given in marriage portions, of £20 each, to forty poor maidens of the town, with restrictions that the young women must be of good reputation, between the ages of sixteen and fifty, and married within two months after receiving the gratuity. An infirmary, capable of receiving thirty-eight patients, was erected in 1803; towards the building and endowment of which Mr. Whitbread, one of the members of parliament for the borough, gave £8000. A new gaol was erected in 1801, towards which the same gentleman contributed £500. In 1812 was erected an asylum for lunatics. The assizes and sessions of the county are held in the Shire hall, erected in 1753.

The principal manufacture is lace, but in the house of industry an extensive manufactory of

has been established, which has consider-
duced the poor's rates.
soil in the neighbourhood is singularly
ive of good wheat and barley, which are
sent to the markets of Hitchin and Hert-
There are six annual fairs, besides a wool
ich has been established by the Agricul-
ociety of the county. There are also
ekly markets; one on Saturday, for corn,
ther on Tuesday for cattle. A consider-
de is carried on in coals, timber, and
hich are brought by the river from Lynn
rmouth.
bailiff of Bedford is a name which the
nts of Ely have from time immemorial
the inundations of the Ouse, the waters
h, after violent rains, frequently over-
the island, so as to suspendall pursuits,
nfine the people prisoners till they are

ORD, a county of the United States,
inia, bounded on the north by James
ast by Campbell, west by Botetourt, and
y Franklin county. It is thirty-four
n length, and twenty-five in breadth.
and gypsum are met with in this county.
reeably variegated with hills. The chief
New London.
ORD, a large mountainous county of
lvania, bounded on the north by Hunting-
st by the North mountain, west by the
ny mountain,and south by part of Washing-
Alleghany counties, in the state of Mary-
It is fifty miles in breadth from north to
nd fifty-four in length from east to west;
livided into nine townships, viz. Bedford,
ury, Hopewell, Dublin, Providence, Bel-
ethel, Colrain, Cumberland valley, and
derry. The chief waters are the Rays-
anch of the Juniatta, Wills, and Licking
The chief mountains are Wills, Evits,
s, Sideling-hill, Dunnings, &c. and a few
f inferior magnitude. The valleys between
these are extensive, rich, and in many
ell cultivated. Limestone and iron ore
d in many places. This county was pur-
from the Indians in 1768 by William
nd established in 1771.
ORD, a post town of Pennsylvania, and
of the above county, situated on the south
the Raystown branch of Juniatta river,
two small creeks. The town stands on
nence, and is embosomed by still loftier
all sides; that on the west rising to the
of 1300 feet, and that on the east 1100.
gularly laid out, and contains a brick
-house, a stone jail, a court-house, a brick
g for keeping the records of the county,
bank. The inhabitants are supplied with
rom a spring at the distance of half a mile,
s conveyed by wooden pipes to a reservoir
centre of the town. It was incorporated
ct of the assembly, passed in the winter
of 1795, and is governed similar to Chester.
ten miles west of Philadelphia. Long.
W., lat. 40° 0′ N.
ORD NEW, a sea-port and post town in
nty of Bristol, Massachusetts, United
of America, is about fifty-two miles south

of Boston, the capital of that province. Seated pleasantly on an arm of the sea, which stretches from Buzzard's Bay, and forms the estuary of the Accushnet river, it commands an extensive prospect, with a spacious and commodious harbour. As late as 1810 Bedford included Fairhaven, on the opposite side of the estuary, which has since been incorporated into a distinct town. Its population, after the above division, was computed at something more than 5000, many of whom are engaged in commerce. The chief buildings are a bank, five places of worship, and a library, besides which there is a considerable academy, for the use of the Society of Friends. The amount of shipping belonging to the port in 1818 was 24,000 tons. The vessels are employed in the whale, cod, and other fisheries, with the exception of a few which trade to Europe and the West Indies. The average value of exports from this port of America has been calculated at 130,000 dollars; the imports are not accurately known. Ship-building is carried on to a considerable extent, and a weekly newspaper is published. The town lies in lat. 41° 38′ N., long 70° 54′ W.

Bedford, a town of the United States in West Chester, county of New York, thirty-five miles N.N.E. of New York. Long. 70° 51′ W.

Bedford, a town of Virginia, 100 miles south-west of Richmond.

Bedford, a town of the United States in the west end of Long Island, New York. Four miles north-west of Jamaica bay, and six east from the city of New York.

Bedford, a township of New Hampshire, in Hillsborough county. It lies on the west bank of the Merrimack, fifty-six miles west of Portsmouth.

Bedford, Cape, a cape on the coast of Labrador, in Davis' straits. Long. 67° 50′ W., lat. 67° N.; also a cape at the north-east extremity of New Holland. Long. 214° 45′ W., lat. 15° 16′ S.

Bedford, New, a town of Massachusetts, in Bristol county. Fifty-eight miles south of Boston. Long. 70° 52′ W., lat. 40° 41′ N.

Bedford Level, an extensive tract of low land, stretching over part of the counties of Suffolk, Norfolk, Huntingdon, Lincoln, Northampton, Cambridge, and the Isle of Ely, including a superficial area of nearly 400,000 acres, or 625 square miles. It appears from various phenomena, noticed by different authorities, that the greater part of this space anciently consisted of dry and cultivated land, although from mismanagement, neglect, or some convulsion of nature, it lost its fertility, and assumed its present appearance. Numerous trees of considerable dimensions, remains of buildings, with other natural and artificial productions, found at various depths below the surface, sufficiently evince, that it could not always have been a morass; although they furnish no means of ascertaining the original causes and steps of its deterioration. Dugdale states, that in draining the isle of Axholme, many oaks, firs, and other trees were found at the depths of three, four, and five feet; the roots were firm in the earth, and the trunks had been evidently burnt down, as the ends were reduced to a kind of charcoal. 'The oaks were lying in multitudes, and of an extraordinary size, being five yards in compass, and sixteen yards long, and some smaller, of a great length, with a great quantity of acorns, and small nuts near them.' Coincident with the above statement, is the following of Mr. Elstob, in his Historical Account of the Bedford Level, which relates, that 'in 1764, many roots of trees were found near Boston in Lincolnshire, in the position in which they had grown, at the depth of eighteen feet below the thin pasturage of the surface.' But the most remarkable circumstance is, that not only trees, but the foundations of buildings, a smith's forge, with many of his tools, several iron articles, horse-shoes &c. have been found near Boston, at sixteen feet depth in the soil. Tacitus, in his Life of Agricola, states that 'the Britons complained of their hands and bodies being worn out and consumed by the Romans, in clearing the woods, and embanking the fens,' in which he is thought to allude more particularly to the destruction of the forests, which anciently covered a considerable part of the Bedford Level. Henry of Huntingdon, a writer of the time of king Stephen, who reigned from 1136 to 1154, describes this part of the kingdom 'as very pleasant and agreeable to the eye, watered with many rivers which run through it, diversified with many large and small lakes, and adorned with many woods and islands.' William of Malmsbury, who flourished in the reign of Henry II., Stephen's successor, describes this tract of country in the most favorable terms, and mentions with astonishment the size of the trees, by which many parts of it were adorned. This statement forms a singular coincidence with those already given, and is corroborated by facts and evidences yet remaining, which furnish, perhaps, the best illustration of this singular and interesting subject.

It is evident, from the above testimonies, that the inundation, by which this beautiful country was converted into the present morass, must have happened after the period of the latter historian, although the precise circumstances which led to it are not determined. This is certain, that the country was completely overflowed, and that it was rendered almost impassable, even for boats, by the sedge, reeds, and mud, with which it was covered, while the putrid effluvia, arising from the stagnant waters, destroyed the health of the inhabitants.

The reign of Edward I. was distinguished by an unsuccessful effort to drain these fens, and several succeeding attempts, in the reigns of Henry VI. and Charles I., after involving considerable expenses, were alike unfortunate. At length, in the year 1634, Francis, earl of Bedford, in conjunction with thirteen gentlemen, undertook the Herculean task, and to a considerable length succeeded; whence the whole of this farming district was called after his name. As a considerable part of the estate of this nobleman consisted of possessions in the vicinity of this marsh, which had been granted to his ancestor on the dissolution of the monasteries, by Henry VIII; he prosecuted the work with the greater assiduity, on the promise of having 95,000 acres assigned him in case of a successful accomplishment of his enterprise. The king granted an immediate charter of incorporation, and withi
three years and a-half from the before mentioned
period, the public surveyor, at the instance of the
commissioners, set out the land. The right of
this corporation was afterwards opposed, and the
earl dispossessed of the reward of his services;
but the civil wars giving a new direction to the
schemes of political enterprise, William Duke of
Bedford was, in 1649, restored to the possessio
of his rightful patrimony, and under the patro
age of a new act, operations were continued upo
an extensive scale; and in 1653, after an expen
of £400,000, the level was thought to be full
drained, and the original grant was finally co
firmed. The new territory was afterwards (f
the better regulation of property), divided in
three districts, viz. the northern, middle, an
southern. A surveyor was appointed for each
the former, and two for the latter; numero
contentions, litigations, charters, and laws, ha
nevertheless issued; for further information upo
which we refer the reader to the Beauties
England and Wales, vol. ii. and Elstob
Historical Account of the Bedford Lev
Notwithstanding all that has been done, mu
fine land remains undrained in this part of E
gland; and, in the winter season, is subject
frequent inundations. It is the haunt of v
flocks of water fowl, which are taken in con
derable numbers. As many as 3000 couple
often sent to the London markets in one we
from a single decoy, in the neighbourhood
Ely.

BEDFORDSHIRE, a small inland county
England, bounded on the north and north-w
by Northamptonshire, on the east by the count
of Huntingdon, Cambridge, and Hertford, and
the west by those of Buckingham and Northam
ton. Its limits are winding and irregular, a
the only natural ones are the Ouse, for a sh
space on the east and west, and a small rive
on the south-west border. Its form is ne
oval; it is thirty-six miles in extreme length, fr
eighteen to twenty-two in breadth, and 145
circumference.

The total of land in this county has b
variously calculated. The report of the Board
Agriculture states the superficial area at 307,
acres. The returns to parliament, relative to
poor's rates, make it 275,200 acres; but
Becke, in his Observations on the Income T
gives the content at 293,059 acres; whilst
Population Returns of 1821 state the area at
square miles, which is rather more than the m
of the three preceding numbers, and is found
upon the Trigonometrical Survey of England
Wales. According to one, we believe, of
most correct authorities, the superficial con
of land in Bedfordshire is computed at
square acres, of which 80,000 are in a course
tillage, and 168,000 employed in pastur
This populated area includes 124 parishes,
ten market towns, in which are 13,640 hou
and upwards of 71,000 inhabitants, of w
4155 families are employed in commerce
manufactures, and 9431 in agriculture. It
the Norfolk circuit, province of Canterbury,
bishopric of Lincoln, and is divided into
hundreds, viz. Barford, Biggleswade, C

Flitt, Manshead, Redborne, Stodden, Willey, and Wixamtree. Its rivers are the Ouse, the Ivel, the Lea, and the Ouzel, together with a few others of inferior note, which come more properly under the denomination of streams. The Ouse is made navigable to Bedford, and divides the county into two parts. Nearly the whole of Bedfordshire lies upon the eastern side of the grand ridge, which separates the waters which flow into the German Ocean from those which pour themselves into the Irish Sea: its general inclination is therefore towards the east, and in that direction its principal rivers flow.

The face of the county is generally varied with small hills and valleys, few of which aspire to the height of mountains. There are, nevertheless, some of a bolder description. The Chiltern hills, composed of a vast mass of chalk and flint stones, lie along the southern border, and form a lofty range, which, rising to an unusual altitude, and irregularly projecting over the valleys, gives the whole landscape a remarkable appearance. The clay hills are stretched over the northern part, and a ridge of sand hills enters the county from the west, in a direction towards the north-east. From the south-east corner to the middle of the county runs a line of good dairy land; the western side is, for the most part, flat and sandy. The north and east portions have a deep soil, which produces large crops of corn, and is generally well wooded. The alluvial soils, which prevail in Bedfordshire, generally consist of yellow and dark colored clays, which are diversified with tracts of chalk and sand. On the south of Luton and Dunstable particularly, the upper stratum is chalk, blended with numerous layers of flints and silicious earth, which is succeeded by hard chalk alone. The mineral productions of the county are limestone, coarse marble, and some coal. The fuller's earth, which is found so plentifully, is a kind of mixed clay, chiefly obtained in the neighbourhood of Woburn, and is of great use in cleansing woollen goods. Mineral springs are also found in different parts of the county, although they have not acquired much celebrity. The chief are those of Barton, Bedford, Bletsoe, Blunham, Bromham, Bushmead, Clapham, Cranfield, Holcot, Milton Ernest, Odell, Pertenhall, Riseley, Silsoe, Turvey, and Wrest Garden. Some of these are saline, and others chalybeate, whilst several have not been yet analysed.

The climate of Bedfordshire, from its situation as an inland county, is of a medium temperature and moisture. From meteorological observations, made at Leighton-Buzzard, for four years, ending with 1804, it appeared that the mean monthly height of the barometer was 29°52 inches; that of the thermometer, with a northern aspect, and in the open air, observed at eight o'clock in the morning, was 47° 2. The average quantity of rain per month was 1,93 inches, and the evaporation 1'05. Thus, by multiplying these numbers by 12, we have 23·16 and 12·6, the former of which is little more than the average of London. The most prevalent wind observed during this period was the south-west. Upon the whole, this county does not appear to be remarkably salubrious, since, from the late returns of the population, fewer instances of longevity were found, in proportion to the number of inhabitants, than in many others of the united kingdom.

This county has never been remarkable for the extent of either its commerce or manufactures. The most general employment is the making of lace, and preparing straw-plat for the manufacture of hats, bonnets, baskets, toys, mats, &c. The market-towns, for the promotion of internal commerce, are, Bedford, Ampthill, Dunstable, Biggleswade, Leighton-Buzzard, Luton, Potton, Shefford-Tuddington, and Woburn. Four members are sent from this county to parliament, in which the Russel, Osborne, and Whitbread families have a preponderating influence.

When the Romans landed in Britain, A. A. C. 55., this county was included in the district inhabited by the Catieuchlani, whose chief, Cassibelinus, headed the force of the whole island against Cæsar, and the year following was totally defeated. In 310 the emperor Constantine divided Britain into five Roman provinces, when this county was included in the third division, called Flavia Cæsariensis; in which state it continued 426 years, when the Romans quitted Britain. A severe battle was fought at Bedford in 571 or 580, between the Saxons and the Britons. At the establishment of the kingdom of Mercia (one of the divisions of the Saxon heptarchy), it was considered as part of that kingdom; and so continued from 582 to 827, when, with the other petty kingdoms of the island, it became subject to the West Saxons, under Egbert, and the whole was named England. In 889 Alfred held the sovereignty, when England was divided into counties, hundreds, and tythings, and Bedfordshire first received its present name.

In the tenth and eleventh centuries, this county was the seat of various conflicts with the Danes, which terminated in the final expulsion of the invaders. Many castles had been erected during these periods, most of which were demolished by king John, during his progress to the north, except that of Bedford, which was dismantled by Henry III.; after which the county is noted for few remarkable occurrences till the year 1642, when it entered into an association against Charles I.

The remains of both Saxon and Gothic architecture are to be seen in several of the churches, as also a few specimens of stained glass in their windows. Roman antiquities, also, are frequently discovered in the county. It is intersected by three Roman roads, and interspersed with military stations. A fortification, called Totternhoe Castle, is seen on the brow of a hill, about two miles from Dunstable, and consists of a lofty circular mound, with a slight vallum around its base; at a distance from which is a much larger one, of irregular form. The other remarkable remains are, a Roman station at Sandy near Potton, (the Magiovinum of Antoninus,) by others supposed to be the ancient Salenæ, containing thirty acres, where many urns, coins, &c. have been dug up. Another at Madining-bowre, or Maiden-bower, one mile from Dunstable, containing about nine acres, which Camden supposes to have been a Roman station, from the coins of the emperors having been frequently dug up there, and calls it Magintum. Leighton-Buzzard is supposed to have been a Roman camp, and another is at Arlesey near Shefford, and a Roman amphitheatre may be traced near Bradford Magna. The Roman road, Icknield-street, crosses this country; entering at Leighton-Buzzard, from whence it passes Dunstable, where it inclines northward over Warden hills to Baldock in Hertfordshire. The Watling-street enters this county near Luton from St. Albans, passes a little north of Dunstable, where it crosses the Icknield-street, and from thence to Stoney Stratford in Buckinghamshire. A Roman road also enters near Potton, passes on to Sandy, and from thence to Bedford, where it crosses the Ouse, and proceeds to Newport Pagnell in Buckinghamshire. The following antiquities in this county are well worthy of attention: Bedford Bridge and Priory; Chicksand Abbey, near Shefford; Dunstable Priory, near Luton; Eaton Park House, or Eaton Bray; Five Knolls, near Dunstable; Newnham Priory, near Bedford; Northill church, three miles from Biggleswade; Summeris Tower, near Luton; Warden Abbey, near Shefford; Woburn Abbey; and Woodhill Castle, or Oddhill Castle, near Harwood.—John duke of Bedford, third son of Henry IV. king of England, commanded the English army in France in 1422; and, after making himself master of that kingdom, died at Rouen in 1435, where a handsome monument was erected to his memory. One of the courtiers of Charles VIII. having advised him to destroy it, the king answered, 'Let him rest in peace, who, when living, made all the French tremble.'

BEDIM, be and dim. See DIM.

BEDIZEN, be and dizen. See DIZEN.

BEDLAM, *n.* & *adj.* } Corrupted from
BEDLAMITE. } *bethlehem*, the name of a religious house in London, converted afterwards into an hospital for the mad and lunatic. The adjective, in the sense of mad, is applied to things as well as persons.

> Let's follow the old earl, and get the *bedlam*
> To lead him where he would; his roguish madness
> Allows itself to any thing. *Shakspeare.*

> One morning very early, one morning in the spring,
> I heard a maid in *Bedlam*, who mournfully did sing,
> Her chains she rattled on her hands, while sweetly
> thus sung she,
> I love my love, because I know my love loves me.
> *Prior.*

> If wild ambition in thy bosom reign,
> Alas! thou boast'st thy sober sense in vain;
> In these poor *bedlamites* thyself survey,
> Thyself less innocently mad than they.
> *Fitzgerald.*

> At this rate we are wonderfully mistaken when we speak of Don Quixote as a madman, and of Leonidas, Brutus, Wallace, Hampden, Paoli, as wise, and good, and great! The case it seems is just the reverse; these deserve no other names than that of raving *bedlamites.* *Beattie. Don Quixote.*

BEDLIS, or BETLIS, a strong town of Asiatic Turkey in the Páchalic of Ván, lat. 38° 34′ N., and long. 42° 35′ E. It is placed in a narrow defile, defended by a triangular castle, between two lofty mountains, and traversed by the river Kuzur, which joins the Júi Rubát below. Here are many public buildings deserving notice, and among them several medresehs, or col which, together with the list of eminent w who have been natives of this place, show learning was much encouraged by its fo rulers. The castle contains 300, and the about 5000, houses within its precincts. fortress submitted to the Mussulman arms u the caliphate of Omar (A. D. 647), and was quered by the Turks under Sultán Murád (A. D. 1634). Its inhabitants are Huzeg tribe of Kurds and Armenians, in nearly e proportions, who amounted in the middle of seventeenth century to about 80,000. strength of its position has often enabled the maintain a virtual independence of the Port

BEDLOE (William), who assumed the tit captain, was an infamous adventurer of birth, in the reign of Charles II. He had velled over great part of Europe under diffe names and disguises, as a man of rank and tune. Encouraged by the success of Oat gave an account of Godfrey's murder, and ad many circumstances to the narrative of the mer. These villains had the boldness to ac the queen of entering into a conspiracy aga king Charles I's life. A reward of £500 voted to Bedloe by the Commons. He is to have asserted the reality of the plot on death-bed: but it abounds with absurdity, tradition, and perjury. He died at Bri August 20th, 1680. Giles Jacob informs that he was author of a play, called The Exc municated Prince, or the False Relict, The printer of it having, without the auth knowledge, added a second title, and calle The Popish Plot in a Play, greatly excited curiosity of the public, who were, however, m disappointed, when they found the plan of piece to be founded on a quite different s Anth. Wood, however, asserts that this play written partly, if not entirely, by Thos. W M. A. of Jesus College, Oxford.

BED-MOULDING, in architecture, us consists of an ogee, a list, a large boultine, another list under the coronet.

BEDNORE, or BIDDANORE, a district in north-west extremity of the Mysore, Hindo on the summit of the western Ghauts. the elevation of the country, the season is a m later here than on the sea coast. The ex consist of cattle of small size, pepper, betel cardamoms, sandal-wood; the imports are rice, cocoa-nuts, oil, turmeric, and cotton cl When overrun by Hyder, in 1762, the Bed dominions extended over the maritime pro now named Canara, and to the east over a of open country, extending to Sunta, Bed and Hoolukera, within twenty miles of Ch droog.

BEDNORE, or BIDDANORE, a town of Hin tan, capital of the district of that name, 452 south-east of Bombay, and 187 north-we Seringapatam. It was taken by the Brit 1783, and retaken soon after by Tippoo Su but on his defeat and death, in 1799, the and its suburbs became subject to the Br It is said to have been once a well-fortified magnificent city, containing 20,000 house the time of the sultan Tippoo's death, a sisted of about 1500 houses, besides huts. When taken by Hyder, in 1763, it was eight miles in circumference, and it is said the plunder actually realised amounted to twelve millions sterling. He afterwards changed its name to Hydernagur.

BEDOTE, To doat upon, to pet, to befool; obsolete.

To *bedote* this I ween was their interest.

BEDOWINS, or BEDWINS, the nomade inhabitants of the Arabian and African deserts, whose name, derived from the Arabic bedowí, 'a native of the desert,' answering to the Arabes scenitæ of the ancients, or Arabs dwelling in tents, agrees with their mode of living in encampments, pitching their movable habitations wherever they can find pasturage, and changing their site as often as plunder, famine, and other circumstances may require.

They are the purest and best preserved of all the Arab tribes, tracing their origin to the twelve tribes of Ishmael, mentioned in Gen. xvi. 11, xxv. 12; and are the lineal descendants of those ancient Arabs mentioned by the Greek historians, whose site they occupy, and whose customs, manners, prejudices, and superstitions, they rigorously preserve. These people have been frequently confounded by ecclesiastical writers with the Edomites, Amalekites, and other neighbouring nations to the Hebrews; but it is evident that the latter nations, although branches derived from the same stock, differ in many important points from the genuine Bedowins.

Dwelling in the interior of those vast deserts which extend from the confines of Persia to Morocco, the true Arabians have had little foreign intercourse, and have never mixed with surrounding nations, either by conquest or capture; few emigrations occurred even at the epoch of the revolution effected by Mahomet: on which account, the prophet, in his Koran, is continually styling the Arabs of the desert infidels and rebels; nor has the lapse of time since that period effected any remarkable change in their national character. They still answer the description given by the angel in prophecy, 'wild men, whose hand is against every man, and every man's hand against them;' and their mode of living, at the present day, is precisely the same as that mentioned by Diodorus Siculus, nearly 2000 years ago. It has, indeed, been thought remarkable, that Diodorus should observe silence with respect to their predatory habits; but it is highly probable that, at that time, they were so much restrained by the vigilance of the Roman government, as rarely to have an opportunity of exhibiting that distinguishing feature of their character.

The wandering life of these people arises in a great measure from the site they occupy. To paint to himself these deserts (says Mr. Volney,) the reader must imagine a sky almost perpetually inflamed, and without clouds, immense and boundless plains, without houses, trees, rivulets, or hills, where the eye frequently meets nothing but an extensive and uniform horizon, like the sea, though in some places the ground is uneven and stony. Naked as it is almost invariably on all sides, the earth presents nothing but a few wild plants thinly scattered, and thickets, whose solitude is rarely disturbed but by antelopes, hares, locusts, and rats. Such is the nature of nearly the whole country, which extends 600 leagues in length and 300 in breadth, stretching from Aleppo to the Arabian Sea, and from Egypt to the Persian Gulf. It must not, however, be imagined that the soil in so great an extent is everywhere the same; it varies considerably in different places. On the frontiers of Syria, for example, the earth is in general fat and cultivable, nay even fruitful. It is the same also on the banks of the Euphrates: but in the internal parts of the country, and towards the south, it becomes white and chalky, as in the parallel of Damascus; rocky, as in the Tih and the Hedjaz; and a pure sand, as to the eastward of Yemen. This variety in the qualities of the soil is productive of some minute differences in the condition of the Bedowins. For instance, in the more sterile countries, that is, those which produce but few plants, the tribes are feeble and very distant; which is the case in the desert of Suez, that of the Red Sea, and the interior of the great desert called Najd. Where the soil is more fruitful, as between Damascus and the Euphrates, the tribes are more numerous, and less remote from each other; and, lastly, in the cultivable districts, such as the pachalics of Aleppo, the Hauran, and the neighbourhood of Gaza, the camps are frequent and contiguous. In the former instances, the Bedowins are purely pastors, and subsist only on the produce of their herds, and on a few dates and fresh meat, which they eat either fresh or dried in the sun and reduced to a powder. In the latter, they sow some land, and add cheese, barley, and even rice, to their flesh and milk diet. In those districts where the soil is stony and sandy, as in the Tih, the Hedjaz, and the Najd, the rains make the seeds of the wild plants shoot, and revive the thickets, ranunculi, wormwood, and kali. They cause marshes in the lower grounds, which produce reeds and grass, and the plain assumes a tolerable degree of verdure. While the rains continue, the soil produces great abundance both for the herds and their masters; but on the return of the heats every thing is parched up, and the earth, converted into a gray and fine dust, presents nothing but dry stems as hard as wood, on which neither horses, oxen, nor even goats can feed. Such is the situation in which nature has placed the Bedowins, to make of them a race of men equally singular in their physical and moral disposition.

The peculiarities of the Bedowin Arabs are so striking, that their neighbours the Syrians regard them as extraordinary beings, especially those tribes which dwell in the depths of the deserts, such as the Anasa, Kaibar, Tai, and others, which never approach the towns. When, in the time of Sheik Daher, some of their horsemen came as far as Acre, they excited the same curiosity there as a visit from the savages of America would among us. Everybody viewed with surprise these men, who were more diminutive, meagre, and swarthy, than any of the known Bedowins. Their withered legs were only composed of tendons, and had no calves. Their bellies seemed to cling to their backs, and their hair was frizzled almost as much as that of the negroes. They, on the other hand, were no less astonished at every thing they saw; they could neither conceive how the houses and minarets could stand erect, nor how men ventured to dwell beneath them, and always in the same spot; but above all, they were in ecstacy on beholding the sea, nor could they comprehend what that desert of water could be. The Arabs of the frontiers are not such novices; there are even several small tribes of them, who, living in the midst of the country, as in the valley of Bekaa, that of the Jordan, and in Palestine, approach nearer to the condition of the peasants; but these are despised by the others, who look upon them as bastard Arabs and Rayas, or slaves of the Turks. The Bedowins in general are small, meagre, and tawny, owing to the heat of the climate, their continual exercise, and extraordinary abstinence; but well formed, active, and alert in a high degree, having expressive countenances, and bright sparkling eyes. Their beards are remarkably thin, their hair is black and wiry. The two ends of the shawl which forms their turban, hang down upon their shoulders, and constitute almost the only distinction between the dress of the Bedowins and other Arabs. Their sheiks wear very wide sleeves to their robes, and girdles richly embroidered. They also preserve a single lock from the crown of the head, by which, in common with other superstitious Mussulmans, they believe the prophet will carry them up to Paradise. They are continually stroking and anointing their beards; to spit upon which is the greatest possible offence, and the loss or diminution of it will cause an Arab to wander far from his tribe, and even from his country, to avoid the derision consequent upon such a catastrophe.

The abstinence of the Bedowins has long been celebrated; indeed the inferior classes live in a state of almost habitual wretchedness and famine, especially among the tribes of the Najd and the Hedjaz. It will appear almost incredible to us, but is an undoubted fact, that the quantity of food usually consumed by the greatest part of them does not exceed six ounces a day. Six or seven dates soaked in melted butter, a little sweet milk or curds, is the Bedowin's common allowance, and he deems himself happy when he can add a small quantity of coarse flour, or a little ball of rice. Meat is reserved for the greatest festivals; and they never kill a kid but for a marriage or funeral. A few wealthy sheiks alone kill young camels occasionally, and eat baked rice with their victuals. In times of dearth, the vulgar, always half famished, do not disdain the most wretched kinds of food: and eat locusts, rats, lizards, and serpents, broiled on briars. Hence are they such plunderers of the cultivated lands, and robbers on the high roads. Habit undoubtedly has its influence in enabling them to support this extraordinary abstemiousness, by preventing the dilatation of the stomach, otherwise common to the human constitution; whilst the extreme heat of the climate destroys in a great measure the activity and tone of the digestive organs. When we consider the influence of climate, custom, and discipline, the real wants of the Bedowin appear few, and easily satisfied;
and it has been questioned whether even
above abstinence arises from choice or necess
But, depending for provisions entirely on
oases, or small islands of verdure, which lie s
tered upon the desert, the produce of which
often destroyed by the hot pestilential win
his means appear still more contracted than
exigencies, and leave no doubt that necessity
the parent motive.

M. Volney remarked that the sheiks, that
the rich, and their attendants, were always ta
and more corpulent than the common class.
has seen some of them above five feet five
six inches high; though in general they do
(says he) exceed five feet two inches. This
ference can only be attributed to their food, w
which the former are supplied more abundan
than the latter: the effects of this are equ
evident in the Arabian and Turkish camels,
the latter, dwelling in countries rich in for
are far more robust and fleshy than the form

With respect to their internal constitution
government, the Bedowins are divided into se
rate tribes, each composed of one or more p
cipal families, the members of which bear
title of sheiks, i. e. chiefs or lords. These fami
have a great resemblance to the patricians
Rome, and the nobles of modern Europe.
of the sheiks has the supreme command over
others. Mr. Neibuhr styles him the grand sh
He is the general of their little army; and so
times assumes the title of emir, which sign
commander and prince. The more relati
children, and allies he has, the greater is
strength and power. To these he adds part
lar adherents, whom he studiously attaches
him, by supplying all their wants. A numbe
small families also, who, not being strong eno
to live independent, stand in need of protec
and alliances, range themselves under the
ners of this chief; forming by their union
elementary parts of what is called a kabila
tribe. The tribes are distinguished from
other by the name of their respective chiefs
by that of the ruling family; and when
speak of the individuals who compose them,
call them the children of such a chief, tho
they may not be all really of his blood, and
himself may have been long since dead.
they say, Beni Temin Oulad Tai, the chil
of Temin and of Tai. This mode of expres
is even applied, by metaphor, to the name
countries: the usual phrase for denoting in
habitants being to call them the children of
a place. Thus the Arabs say, Oulad Masr,
Egyptians; Oulad Sham, the Syrians;
would also say, Oulad Fransa, the French;
lad Moskou, the Russians; a remark whic
not unimportant to ancient history.

The principal sheik has an indefinite
almost absolute authority. He neverth
leads a simple life, and commonly studies
welfare of his subjects. Persons of this des
tion, according to M. Volney, who in
resided with one of the most powerful in
country of Gaza, may be compared to our
stantial farmers. A sheik who has the com
of 500 horsemen, does not disdain to saddle
bridle his own horse, and give him barley

chopped straw. In the tent, his wife makes the coffee, kneads the dough, and superintends the dressing of the victuals. His daughters and kinswomen wash the linen, and go with pitchers on their head, and veils over their faces, to draw water from the fountain. These manners are highly antique, and agree precisely with the descriptions of Homer, and the history of Abraham in the book of Genesis.

Every grand sheik considers himself, in a political point of view, absolute lord of his whole territories; he exacts duties upon all goods carried through his dominions, to which impositions those who send caravans through the desert to Mecca, are obliged to submit. The Bedowins, on the other hand, keep open the wells for them; permit the free passage of merchandise, escort the caravans, and if they sometimes pillage them, the haughty perfidious conduct of the Turkish officers is the invariable cause. The latter affect to consider the former as rebels, and violate their engagements. The Arabs take their revenge by pillaging the caravans. When the famous Ali Bey conducted the Egyptian caravan to Mecca, he refused to defray all the duties on the road, but promised to pay the rest on his return. This promise was broken, and the year following, the Arabs assembled in greater numbers, and obliged the captain of the caravan to pay for himself and Ali Bey both. The Turks exclaimed against this as an act of robbery; yet the Arabs had only done themselves justice. The conduct of Abdallah, pacha of Damascus, who commanded the Syrian caravan in 1756, was still more odious. When the sheiks of the tribe of Harb came to meet him, to receive the stipulated toll, he gave them a friendly invitation to visit him, but instead of paying the toll, cut off their heads, and sent them to Constantinople, as a proof of his victory over the rebel Arabs. The stroke which the latter suffered by the death of their chiefs, prevented their attempting any thing in revenge either that or the following year; the caravans travelled in triumph to Mecca; and the Turks boasted of the valor and prudence of Abdallah Pacha. But, in the third year, the dark storm of vengeance burst over the heads of the aggressors, when the Arabs, with an army of 80,000 men, under the command of the sheik of the Anæse tribe, routed the Turks with great slaughter, and confiscated the treasures of a large caravan. These violent measures, however, may be considered as only the effects of perfidy and provocation. Mr. Niebuhr observes, that the Bedowins are not cruel, and do not murder those whom they rob, except where the travellers stand upon the defensive, and in the contest kill one of their number; in which case the Arabs proceed according to the law of retaliation. A mufti of Bagdad, returning from Mecca, says the same author, was robbed in Nedsjed. He entered into a written agreement with the robbers, who engaged to conduct him safe and sound to Bagdad for a certain sum, payable at his own house. They delivered him to the next tribe; those to a third, and he was thus conveyed from tribe to tribe, till he arrived safe at home.

An European, belonging to a caravan which was plundered, had been infected with the plague upon his journey. The Arabs, seeing him too weak to follow his companions, took him with themselves, lodged him without their camp, attended him till he was cured, and then sent him to Basra. An Englishman, who was travelling express to India, and could not wait for the departure of a caravan, hired two Arabs at Bagdad, who were to accompany him to Basra. By the way he was attacked by some sheiks, against whom he at first defended himself with his pistols; but, being hard pressed by their lances, was forced to surrender. The Arabs, upon whom he had fired, beat him till he could not walk. They then carried him to their camp, entertained him for some time, and at last conducted him safe to Basra. When Mr. Forskal was robbed by the Arabs in Egypt, a peasant, who accompanied him, was beaten by the robbers because he had pistols, although he had made no attempt to defend himself with them. Pillaging expeditions amongst the Arabs are considered as lawful hostilities against enemies, who would defraud the nation of their dues, or against rival tribes, who have undertaken to protect illegal traders.

The tribes of the Bedowins are extremely numerous, and to attempt an enumeration of them would be a hopeless task. Soyúti, in the fifteenth century, collected many interesting accounts respecting them; but all investigations must, from the very nature of the subject, be exceedingly imperfect. The principal noticed by modern travellers lie in the following order:—

I. Those on the southern and eastern side of the Great Arabian and Syrian Desert, extending from the province of Nejed and El Ahsà to the banks of the Euphrates.

1. Benì Kháled (the children of Kháled), in El Ahsa.
2. Benì Kiyàb, on the northern side of the Persian Gulf, and in Persia.
3. Benì Lám, on the Tigris.
4. Montefic, or Montefij, on the Euphrates, between Basra and Baghdád.

II. Those on the borders of Mesopotamia (Al Jezírah), nominally subject to the pachà of Baghdád.

1. Táí, one of the most ancient and powerful tribes, occupying the fertile plains between Mosul and Nisibis, and rendered illustrious by one of its princes named Hátim, the subject of many well-known romances.
2. Some other tribes which are small and unimportant.

III. Those on the borders of Syria, who provide escorts for the caravans of pilgrims to Mecca.

1. The Mawali.
2. The Benì Sáker
3. The Fáhili, and
4. A numerous and powerful tribe, master of the whole caravan route between Aleppo and Medinah; and, during the reign of the Wahhábis, one of their most effective adherents. It is divided into five inferior clans, and extends from Syria to the Nejed.

IV. More than one hundred other tribes have been mentioned by the writers whose names are at the close of this article; besides which there are several in Omàn, Hadramaût, Mahrah, and other provinces of the Arabian peninsula, who have never been visited by Europeans. Bedowins also occupy a large portion of Egypt, stretch along the banks of the Nile, almost to the confines of Abyssinia, and are found even in the Súdán itself, as far as the fifteenth degree of east longitude. The latter call themselves branches of the Anezehs, Johaïnahs, and other well-known tribes in the Arabian and Syrian deserts. The Bedowins in Súdán retain the Arab cast, both in complexion and features, bearing no similitude to the negroes, and one of the Benî Hassan, established in Dár Katakù, near Bornù, whom Burckhardt met at Mecca, was of a dark brown color, 'approaching to a copper tinge;' yet 'his features were decidedly Arab,' having nothing of the Negro in them.—*Burckhardt's Nubia*, p. 477.

Each of the Bedowin tribes appropriates to itself a tract of land, forming its territorial domain; and collected in camps, which are dispersed through the country, make a successive progress over the whole, in proportion as it is exhausted by the cattle. Hence it is, that within a great extent few spots are inhabited, and these vary from one day to another; but as the entire space is necessary for the annual subsistence of the tribe, whoever encroaches on it is deemed a violator of property; this is with them the law of nations. If, therefore, a tribe, or any of its subjects, enter upon a foreign territory, they are treated as enemies and robbers, and a war breaks out. Now, as all the tribes have affinities with each other by alliances of blood or conventions, leagues are formed which render these wars more or less general. The manner of proceeding on such occasions is very simple. The offence made known, they mount their horses and seek the enemy; when they meet they enter into a parley, and the matter is frequently made up; if not, they attack either in small bodies or man to man. They encounter each other at full speed with fixed lances, which they sometimes dart, notwithstanding their length, at the flying enemy: the victory is usually decided by the first shock; the vanquished take to flight full gallop over the naked plain of the desert, and the night generally favors their escape from the conqueror. The tribe which has lost the battle immediately strikes its tents, removes to a distance by forced marches, and seeks an asylum among its allies. The enemy, satisfied with their success, drive their herds farther on, and the fugitives soon after return to their former situation; although the slaughter made in these engagements frequently sows the seeds of hatreds which originate future dissensions.

An eye for an eye, and a tooth for a tooth, was, we know, exacted by the law of Moses; and the universality of this Lex Talionis is one of the distinctive marks of the Bedowin race, prevailing through the whole extent of the Arabian deserts. By this law the blood of every man must be avenged by shedding that of his murderer. This vengeance is called tar, or retaliation; and the right of exacting it devolves on the nearest of kin to the deceased. So nice are the Arabs on this point of honor, th any one neglects to seek his retaliation he is d graced for ever. He therefore watches ev opportunity of revenge: if his enemy peri from any other cause, still he is not satisf and his vengeance is directed against the near relation. These animosities are transmitted an inheritance from father to children, and ne cease but by the extinction of one of the famil unless they agree to sacrifice the criminal, purchase the blood for a stated price, in mo or in flocks. Without this satisfaction there neither peace, nor truce, nor alliances, betw them, nor sometimes even between whole trib there is blood between us, say they on ev occasion; and this expression is an insurmou able barrier. Such accidents being necessa numerous in a long course of time, the gre part of the tribes have ancient quarrels, and in an habitual state of war; which, added their way of life, renders the Bedowins a mili people, though they have made no great prog in war as an art. Their camps are formed i kind of irregular circle, composed of a sin row of tents, with greater or less intervals. Th tents, made of goat or camel's hair, are black brown, in which they differ from those of Turkmen, which are white. They are stretc on three or four pickets, only five or six feet hi which gives them a very flat appearance; a distance, one of these camps seems only lik number of black spots; but the piercing ey the Bedowin is not to be deceived. Each inhabited by a family is divided by a cur into two apartments, one of which is app priated to the women. The empty space wi the large circle serves to fold their cattle ev evening. They never have any intrenchme their only advanced guards and patroles dogs; their horses remain saddled and read mount on the first alarm; but as there is nei order nor regularity, these camps, always e to surprise, afford no defence in case of an att accidents, therefore, very frequently happen, cattle are carried off every day; a species marauding war in which the Arabs are very perienced. The tribes which live in the vici of the Turks are still more accustomed to att and alarms. The latter never cease to w secret or open war against them. The pa study on every occasion to harass them. So times they contest with them a territory wh they had let them, and at others demand a trib which they never agreed to pay. Should a fa of sheiks be divided by interest or ambi they alternately succour each party, and conc by the destruction of both. Frequently they poison or assassinate those chiefs wh courage or abilities they dread, though t should even be their allies. The Arabs, on t side, regarding the Turks as dangerous enem watch every opportunity to do them an inj cut their harvests, carry off their flocks, and tercept their communication and comme making it their study to put them to every convenience, and deprive them of every th but life.

Notwithstanding the depredations which ren them a terror to those around them, an themselves they are remarkable for a good faith, a disinterestedness, and a generosity, which would do honor to the most civilised people. The rights of hospitality are scrupulously regarded. The tent of a Bedowin is an asylum amongst all the tribes, and the moment a stranger, or even an enemy, flying for refuge arrives there, his person becomes instantly inviolable; from that moment it would be reckoned an indelible shame to satisfy even a just vengeance at his expense, and all the power of the sultan would be insufficient to force a refugee from the protection of a tribe, but by its total extermination. Ali Bey (Don Pedro de la Badia), informs us, that when one of the Bedowins heard that his wife had given some food to his enemy, who by mistake solicited charity at his tent, he replied, 'I should probably have killed my enemy had I found him here, but I should not have spared my wife if she had forgotten the law of hospitality.' What little the Bedowin possesses he is ever generous to divide, he sits at the door of his tent, and invites passengers to partake of his repast; and to observe the conduct of the Bedowin Arabs towards each other, one would be tempted to suppose they had all things in common.

With respect to their domestic laws, Mr. Niebuhr tells us, 'that, although the Mahommedans are permitted to have four wives, the Bedowins, who are poor, and cannot easily find the means of subsistence, content themselves with one, for the most part. Those who are in the easiest circumstances, and who have two wives, seem to have married so many, chiefly that they might superintend their concerns in two different places. The conduct of our sheik of Beni Said, as well as his conversation, led us to make this reflection. The disagreement that subsisted between his two wives afforded an instance of some of the inconveniences that attend polygamy. The dress of the females in the desert, although simpler, is in reality the same as that worn by the ordinary women of Egypt, although the wife of one of our sheiks wore an uncommon piece of dress: brass rings of an enormous size in her ears. These women living remote from the world, and being wholly occupied in the management of their domestic affairs, appear to be, from these circumstances, less shy and scrupulous than the other women of the east. They make less difficulty of conversing with a stranger, or exposing their faces unveiled before him.'

The property of the Bedowin, like his wants, lies within a small compass, and consists of movables, of which the following is a pretty exact inventory:—A few male and female camels; some goats and poultry; a mare and her bridle and saddle; a tent; a lance sixteen feet long; a crooked sabre; a rusty musket with a flint or matchlock; a pipe; a portable mill; a pot for cooking; a leathern bucket; a small coffee roaster; a mat; some clothes; a mantle of black wool; a few glass or silver rings, which the women wear upon their legs and arms. If none of these are wanting their furniture is complete. But what the Arab takes most pleasure in is his mare, which is his chief support, and assists him in his excursions. They prefer the mare on account of her superior docility, and her milk, together with the improbability of her neighing, to the betrayment of the rider. The Arabs trace the genealogies of their favorite horses to the mares of Mahomet's stud, or even to those of Solomon's. The power of enduring hunger and fatigue in these animals is astonishing. The Emir visited by the Chevalier d'Arvieux was saved by a mare, who carried him three days and nights, without rest or food, and conveyed him out of the reach of his enemies. The attachment of the Bedowin to his horse is almost as proverbial as the fleetness of the animal itself. He inhabits the same tent, is treated with the same care, and is almost as much caressed as the children of the family; which gives the Arabian steeds a docility and tractability which no other breed possesses. Niebuhr, indeed, speaks of the Kohlâniet, or thorough bred Arabian horses, as not possessing any beauty, or other excellence than swiftness; but it is highly probable that he was deceived by the wretched condition in which they are commonly kept, from the great difficulty of procuring fodder. He appears also to have been equally misinformed, as to the little value set upon them by the Turks; since the fact is certain, that the Turks esteem them highly, and give immense prices for them, when they can meet with the genuine Arab breed.

The simplicity of the Bedowins has long been celebrated, and numerous illustrations of it have been given. Their love of poetry is well known, and the most ancient Arabian poems, containing the lively descriptions of their customs and opinions, are the productions of Bedowins. The book of Job affords a more ancient picture of the same nation; and both its phraseology and imagery are susceptible of much illustration from the poems and romances of the early Arabs. Tales in prose form another part of their favorite amusements, after the manner of the Adventures of Antar and Ablat, and the Arabian Nights. They have a peculiar passion for such stories, and employ in them almost all their leisure, of which they have a great deal. In the evening they seat themselves on the ground, at the threshold of their tents, or under cover, if it be cold; and there, ranged in a circle round a little fire of dung, their pipes in their mouths, and their legs crossed, they sit a while in silent meditation, till on a sudden one of them breaks forth with, once upon a time, and continues to recite the adventures of some young sheik and female Bedowin: he relates in what manner the youth first got a secret glimpse of his mistress; and how he became desperately enamored of her: he minutely describes the lovely fair; boasts her black eyes, as large and soft as those of the gazelle; her languid and impassioned looks, her arched eye-brows, resembling two bows of ebony; her waist straight and supple as a lance; he forgets not her steps, light as those of the young filley; nor her eye-lashes, blackened with kool; nor her lips painted blue; nor her nails, tinged with the golden colored henna; nor her breasts, resembling two pomegranates; nor her words, sweet as honey. He recounts the sufferings of the young lover, so wasted with desire and passion that his body no longer yields any shadow, At length, after detailing his various attempts to see his mistress, the obstacles of the parents, the invasions of the enemy, the captivity of the two lovers, &c. he terminates, to the satisfaction of the audience, by restoring them, united and happy to their paternal tent; and receives the tribute paid to his eloquence, in the Ma cha allah (an exclamation of praise, equivalent to admirably well!) he has merited. The Bedowins have likewise their love songs, which have more sentiment and nature in them than those of the Turks and inhabitants of the towns; doubtless, because the former, whose manners are chaste, know what love is; while the latter, abandoned to debauchery, are acquainted only with enjoyment. These tales, together with a few traditional receipts in medicine, and a practical knowledge of a few of the constellations, constitute the whole of their literature; and their ignorance in other respects is very remarkable. The following anecdote by Mr. Niebuhr, has been thought worthy of insertion. 'In one of those expeditions, a few years since, undertaken against the pacha of Damascus, who was conductor of the Syrian caravan to Mecca, the tribe of Anæsc, which gained the victory, showed instances of their ignorance, and of the simplicity of their manners. Those who happened to take goods of value knew not their worth, but exchanged them for trifles. One of those Arabs having obtained for his share a bag of pearls, thought them rice, which he had heard to be good food, and gave them to his wife to boil, who, when she found that no boiling could soften them, threw them away as useless.'

With respect to religion, the freedom of the Bedowins is remarkable. There is, however, a striking difference between the Arabs of the towns and those of the desert. While the former crouch under the double yoke of political and religious despotism, the latter live in a state of perfect freedom from both. On the frontiers of the Turks, indeed, the Bedowins, from policy, preserve the appearance of Mahommedanism; but so relaxed is their observance of its ceremonies, and so little fervor has their devotion, that they are generally considered as infidels, who have neither law nor prophet. They even make no difficulty in saying that the religion of Mahomet was not made for them: 'For (add they) how shall we make ablutions who have no water? How can we bestow alms who are not rich? Why should we fast in the Ramadan, since the whole year with us is one continued fast? And what necessity is there for us to make the pilgrimage to Mecca, if God be present everywhere?' In short, every man acts and thinks as he pleases, and the most perfect liberty exists among them.

Their superstitious dread of charms appears from the following passage of Burckhardt's Account of his Journey in the Peninsula of Mount Sinai. He had made it a rule never to let the Arabs, among whom he was travelling, see him write; but 'on one occasion his long absence from his companions roused their curiosity. One of them came to look after him, and seeing him immovably fixed, squatted down on the ground, and closely muffled up, he approached on the tiptoe, and suddenly lifting up the cloak wh
skreened him, detected a book in his ha
'What is this?' exclaimed the Arab, 'What
you doing? I shall not make you answe
for it at present, because I am your compani
but I shall talk further to you about it when
are at the convent.' When they had retur
to their halting place, Burckhardt, 'reque
him to tell what he had further to say.' To
the Bedowin replied, in a passionate tone, '
write down our country, our mountains,
pasturing places, and the rain which falls f
heaven; other people have done this before y
but I at least will never assist in the ruin of
country.' Burckhardt assured him that he li
the Arabs too well to wish to injure them. '
the contrary,' he added, 'had not I occasion
written down some prayers ever since we
Taba, we should most certainly have been
killed, and it is very wrong in you to accuse
on account of that, the omission of which wo
have cost us our lives.' He was startled
this reply, and seemed nearly satisfied. 'P
haps you say the truth,' he observed; 'but
know that some years since, several men, G
knows who they were, came to this coun
visited the mountains, wrote down every th
stones, plants, animals, even serpents and spid
and since then little rain has fallen, and the g
has greatly decreased.' The same opinions p
vail in the mountains as are current among
Bedowins of Nubia, and they believe that a s
cerer, by writing down certain charms, can s
the rains and transfer them to his own count
Travels in Syria and the Holy Land, p. 519.

Notwithstanding this general ignorance
credulity, the Bedowins possess consider
strength of genius; their poems abound
native similitudes, which embellish by their f
and variety, and are distinguished by unexpe
epigrammatic turns. The skill, also, with wh
they draw an unforeseen inference, or bring
an unexpected result, shows the acutenes
their understandings, habituated to a rapi
of plan and execution. Their talent for repa
is well known. When one who could re
all the Hadith or sayings of Mahomet by he
was asked how his memory could retain so m
different sentences at once, he instantly repl
'just as the sand in the desert retains all
pearly drops that fall from the heavens with
losing a single one of them.' Amusing sket
of these people may be found in Volney, S
nini, Bruce, and other Asiatic travellers;
the most accurate are those of the Chev
d'Arvieux, Memoires; six tomes, in 12mo. P
1735, edited by Father Labat, Niebuhr, Be
reibung von Arabien, p. 379. Seetzen,
Zachi, Monathliche Correspondenz, 1819,
bruary and March. Description de l'Eg
Mémoires par Dubuis et Larrey; also in Bu
hardt's Travels, who, as he took great delig
studying the manners and characters of the
dowins, has left a separate and detailed acc
of them.

Living constantly, as the Arabs do, under
camel's hair tents, occupied as they are s
with the care of their flocks and herds, spe
nearly the same language, and placed man

them in the same regions as the Israelites under Moses, their customs and habits bear in many respects a strong resemblance to those of the Jewish patriarchs. The Memoires of the Chevalier d'Arvieux, already quoted, have supplied much curious and useful information on this subject, the perusal of which will interest the reader, and by comparing the articles, as he proceeds, with the Jewish narrative, he will find his views of the patriarchal period, with respect both to the geography and political incidents of it, greatly enlarged.

Those who are fond of tracing the effect produced by local circumstances upon the genius and national character of a people, will find much interesting matter for their consideration in the detailed particulars of the history of this remarkable people. For further historical authorities, we refer to the *Mezhar of Soyúti;* the great historical works of *Abú l' Fedà, Shahristání, and Makrízí; Pococke's Specimen Historiæ Arabum; Sale's Preliminary discourse to his translations of the Koràn; Burckhardt's Translations from Makrízí (Nubia, Appendix,* No. iii.) *Quatremères Mémoires sur l'Egypte,* ii. 190; *Jackson's Account of Morocco; Sonnini, Voyages en Egypte, and Volney's Travels,* ii. 25.

BED'RAGGLE, be and draggle. See Draggle.

DE'DRAWE, be and draw. See Draw.

BE'DREINTE, }
Be'treinte. } See Drench and Drink.

BEDRI, a town and district in the pachalic of Bagdad, the former surrounded by fine gardens. It is the frontier of the Turkish empire.

BEDRIACUM, in ancient geography, a village of Italy, situated, according to Tacitus, between Verona and Cremona, but nearer the latter than the former. From an account given by that historian, Cluverius conjectures that the ancient Bedriacum stood in the place where the town of Caneto now stands. This village was remarkable for the defeat of the emperor Galba by Otho, and afterwards of Otho by Vitellius.

BE'DRIBBLE, be and dribble. See Dribble.

BEDRIP, Bedrepe, or Bederape, the customary service which inferior tenants anciently paid their lord, by cutting down his corn, or doing other work in the field.

BE'DROPT, be and drop. See Drop.

BEDWIN, Great, a town of Wiltshire, six miles south of Hungerford, and seventy west from London. It was anciently a borough by prescription, and sent two members to parliament. It is said to have been a considerable city in the time of the Saxons, and that the traces of its fortifications are extant. It is situated by the side of the Kennet and Avon canal. The church is spacious, with a lofty tower, and is constructed entirely of flints.

BEE, } Ang.-Sax. beo. Wachter
Bee-garden, } derives the name from the
Bee-hive, } Old Saxon byan, which sig-
Bee-master. } nifies to build, and to inhabit,
because the animals designated by the term dwell together under one government, and construct their habitations with great skill and industry.

Monsieur Cobweb; good Monsieur, get your weapons in your hand, and kill me a red-hip'd humble *bee* on the top of a thistle; and good Monsieur bring me the honey bag. *Shakspeare.*

So work the honey *bees,*
Creatures that by a ruling nature teach
The art of order to a peopled kingdom. *Id.*

For that doth wrong must look to be wronged again; Habet et musca splenem, et formica sua bilis inest. The least fly hath a spleen, and a little *bee* a sting. An asse overwhelmed a thisselwarps's nest, the little bird pecked his gaul'd back in revenge, and the humble-*bee* in the fable flung down the eagle's eggs out of Jupiter's lap. *Burton. Anat. Mel.*

As *bees*
In spring time, when the sun with Taurus rides,
Pour forth their populous youth about the hive
In clusters; they among fresh dews and flowers
Fly to and fro; or on the smoothed plank,
The suburb of their straw built citadel,
New rubb'd with balm, expatiate and confer
Their state affairs. *Milton.*

They that are *bee-masters,* and have not care enough of them, must not expect to reap any considerable advantage by them. *Mortimer.*

A convenient and necessary place ought to be made choice of for your apiary or *bee-garden.* *Id.*

To have Bees in the head. A phrase meaning to be choleric; to have that in the head which is easily provoked, and gives pain when it is. Also to be restless. To have 'a bee in the bonnet,' is a similar phrase.

But, Wyll, my maister hath *bees in his head,*
If he find me here pratinge, I am but deade.
Damon and Pith. O. Pl.

He has *a head full of bees.*
Ben Jonson. Barth Faer.

Bee, in natural history, a genus of insects, the characters and habits of which are fully given under the general name, apis. The principal species are there also described. See Apis.

Bee, in astronomy. See Apis.

Bee, in metaphorical language, denotes sweetness, industry, &c. Thus Xenophon is called the Attic bee, on account of the great sweetness of his style. Antonius got the denomination of Melissa, or the bee, on account of his collection of common places. Leo Allatius gave the appellation of apes urbanæ, i. e. city bees, to the illustrious men at Rome from 1630 to 1632.

Bee, or Bie, in the Saxon language, signifies a station; and in this sense makes part of the names of several places in Scotland; such as Cairnbie, Middlebie, Overbie, &c. Perhaps also the different Beestons, &c, in England may have had their names from the same origin.

Bee-bird. See Colibri.

Bee-bread, Bee's-bread, or Bee-glue, the farina of flowers collected by the working bees: called by the ancients propolis. See Apis. We feel, however, the following remarks of Mr. Bonner's too sensible and important to be omitted here:—'The substance, commonly called bee-bread,' he says, 'is to be found at the bottom of many of the cells, and is frequently covered over with honey. The bees carry it home in loads upon their legs, or rather their thighs. It is generally of a yellow color, but often takes its color from the flowers from which it is collected. Various conjectures have been made by different authors respecting its use. Some allege that the bees eat it; hence the name bee-bread. Others suppose, that after being taken into their stomachs, it is converted by some peculiar action of their internal juices into wax, of which every body knows their combs are made. But an objection to this hypothesis arises from the consideration, that the bees, when first put into an empty hive, carry little or none of this stuff on their legs for some time, till a great number of combs are made; and that after the combs are completed (which they generally are within two or three weeks after the swarm have taken possession of the hive), the bees still continue to carry in this stuff during the whole working season. To this, however, it may be replied, that, perhaps, as they have no cells to put it into at that time, they carry it home in their bellies, where it probably undergoes a speedy change in passing through their bodies, and may thereby be converted into perfect wax, with which they manufacture their combs. There is another class of authors, who suppose that the bee-bread is used by the old bees to feed the young ones in the cells, by the mouth, as pigeons feed their young ones. To this it may be objected, that the young bees surely cannot make use of all the bee-bread, which the old bees are almost constantly carrying into the hive, when they are at work. Perhaps both these last hypotheses may be true; as it may not only serve to feed the young bees, but also, by passing through the bodies of the old ones, may be converted into wax; with which bees not only build their combs, when a swarm is newly put into a hive, but also seal up both their young in the cells, and their honey in the combs. If this supposition be true, then the consumption of bee-bread, through the course of the year, but especially during the honey and breeding seasons, must be very great; and therefore we need not be surprised at the quantities imported by the working-bees. But, whatever truth may be in either or both of these theories, I am certain of one thing, that the bees do not live on bee-bread alone; for they will die of hunger, although there be plenty of it in the hive, if there be no honey in it; whereas, when they have abundance of honey, they will live without bee-bread, at least for many weeks. Reaumur, however, says, that it is absolutely necessary for food to bees. For my part, I have always observed the bees most busily employed in carrying in this stuff while the young bees are breeding; but when they want a queen, and have no eggs to rear another, they immediately give over carrying it into the hive; thinking (as it would seem), that as they have no young bees to feed or seal up in the cells, it would be an idle business to bring any more of it home; especially as they do not make much use of it themselves, and have more already in the hive, than they will stand in need of, for their own use.'

Bee-eater. See Meropis.

Bee-hives. See Apis.

Bee humble. See Bombylius.

BEEBAN, a pass in the high road between Algiers and Constantina. The rocks which cross it are in many cases hewn down like so many doors, which has led the Arabs to give it the appellation of beeban, o gates. Six mi
north of Accaba.

BEECH, } Bece and boc, Old Saxon; φηγ
Bee'chen, } and Latin *fagus*. The φ. and
Bee'chy. } being changed into *b*. The m
bearing tree in the earliest ages furnished fo
for man.

> The smooth-leaved *beeches* in the field receive hi
> With coolest shades till noontide rage is spent.
> *Fletcher's Purple Isla*
>
> Black was the forest, thick with *beech* it stood.
> *Dryd*
>
> With diligence he'll serve us when we dine,
> And in plain *beechen* vessels fill our wine.
> I know not why the *beech* delights the glade,
> With boughs extended, and a rounder shade;
> Whilst towering firs in conic forms arise,
> And with a pointed spear divide the skies. *Pri*
> Dull are the pretty slaves, their plumage dull,
> Ragged, and all its brightening lustre lost;
> Nor is that sprightly wildness in their notes
> Which, clear and vigorous, warbles from the *beech*.
> *Thomson's Sea*
>
> Not a pine in my grove is there seen,
> But with tendrils of woodbine is bound;
> Not a *beech* 's more beautiful green,
> But a sweet-briar twines it around.
> *Shenstone. Pastor*

Beech, in botany. See Fagus.

Beech-Fork, a river of the United Sta
in Kentucky, and one of the three princi
sources of the river Salt, which rise in three d
ferent parts of Mercer county; and, windi
westward, unite and form that large navigab
river, about fifteen miles from the Ohio.

Beech Gall, in natural history, a ha
knot on the leaf of the beech, containing t
maggot of a species of fly. There are som
times only one of these upon a leaf, som
times more; they always grow from the sa
point, owing to the fly's having laid so ma
eggs in the same spot. They are of an oblo
figure somewhat flatted, and shaped like the sto
of a plum. They are so hard as not to be brok
between the fingers; their substance seems
the same nature with that of a nut-shell.
each gall there is only one cavity inhabited by
white worm, which in time passes through t
nymph state into that of the fly, to which it ow
its origin.

Beech Mast, the fruit of the beech-tree;
triangular seed, like an acorn, containing a whi
oleaginous pith, of a very agreeable ta
It is used for fattening hogs, deer, &c. It
sometimes, even to men, proved an useful sub
tute for bread. Chios is said to have endure
memorable siege by means of it.

Beech Oil, an oil drawn by expression fr
beech mast. This oil is very common in Pica
and used there, and in other parts of Fran
instead of butter; but most of those who tak
great deal of it complain of pains and a heavin
in the stomach. An attempt was made so
years ago to introduce the manufacture of bee
oil into England, and a patent was granted
the proprietor, but without success; the com
people turning their mast to better account
feeding hogs with it, than by selling it to the
tentee for oil.

BEEDER, a province in the Deccan, H
dostan, now possessed by the Nizam, situa

principally between the sixteenth and eighteenth degrees of north latitude. To the north it is bounded by Aurungabad and Nandere; on the south by the river Krishna; to the east it has the province of Hyderabad; and to the west the province of Bejapoor. In length it may be estimated at 140 miles, by sixty-five the average breadth. The surface of this province is uneven and hilly, but not mountainous, and it is intersected by many small rivers which fertilise the soil, and flow into the Beemah, Krishna, and Godavery. The country is very productive, and under the ancient Hindoo government contained a redundant population, but is now thinly peopled.

Beeder, a town in the province of Beeder, of which it is the capital. Lat. 17° 47′ N., long. 77° 48′ E. It is fortified with a stone wall, a dry ditch, and many round towers. The wall is six miles in circumference, and the town which it encloses stands in an open plain, except the east side, which is a rising ground about 100 yards high. The remains of many good buildings are to be seen in this decayed city. It was formerly noted for works of tutenague inlaid with silver, and before the Mahommedan invasion, was the capital of a Hindoo sovereignty. Travelling distance from Hyderabad, seventy-eight miles, from Delhi 857, from Madras 430, and from Calcutta 980 miles.

BEEF′, *n.* & *adj.* } Fr. *boeuf*, from the Lat.
Beef′-eater, } *bos*, *bovis*, Gr. βους, from
Beef′-witted. } βοω (βοσκω). To feed. The
flesh of the ox, bull, or cow, prepared for food. The plural is beeves. Johnson says, the flesh of black cattle. *Beef-eater*, because the commons is *beef*, when in waiting. Mr. Stevens derives it thus: *beef-eater* may come from *beaufetier*, one who attends at the sideboard, which was anciently placed in a *beaufet*. The business of the *beef-eaters* was to attend the king at meals. A yeoman of the guard.

> Have by the night, accursed thieves,
> Slaine his lambes, or stolne his *beeves*.
> *Browne. The Shepherd's Pipe.*

> A pound of man's flesh
> Is not so estimable or profitable,
> As flesh of muttons, *beeves*, or goats.
> *Shakspeare.*

> The plague of Greece upon thee, thou mongrel *beef-witted* lord. *Id.*

> One way a band select from forage drives
> A herd of *beeves*, fair oxen, and fair kine,
> From a fat meadow ground. *Milton.*

> The fat of roasted *beef* falling on birds, will baste them. *Swift.*

> On hides of *beeves*, before the palace-gate,
> Sad spoils of luxury! the suitors sate. *Pope.*

Beef-eaters, (Beaufetiers), yeomen of the guard to the king of Great Britain, so called from being stationed by the sideboard at great royal dinners. They are kept up rather from state than for any military service. Their arms are a sword and lance. They were first raised by Henry VII. in the year 1485, and anciently consisted of 250 men of the first rank under gentry, and of a larger stature than ordinary, each being required to be six feet high. At present there are but 100 on constant duty and seventy more not on duty; and when any one of the 100 dies, his place is supplied out of the seventy. They go dressed after the manner of king Henry VIIIth's time. Their first commander, or captain, was the earl of Oxford.

Beef-eater, in zoology, the English name of the Buphaga Africana. See Buphaga.

Beef Island, one of the smaller Virgin islands in the West Indies, between Dog Island on the west and Tortola on the east, about five miles long and one broad. Long. 63° 2′ W., lat. 18° 23′ N.

Beef Tea, in medicine, the substance of beef, extracted by boiling it in water, which is now very generally prescribed, and with great success, in all diseases of debility, when the stomach is not able to digest solid food.

Beek (David), an eminent portrait-painter, was born at Arnheim, in Guelderland, in 1621, and became a disciple of Vandyck; from whom he acquired a fine manner of penciling and coloring. He possessed, besides, that freedom of hand, and rapidity of execution, for which Vandyck was so remarkable. King Charles I. when he observed his expeditious manner of painting, was so surprised, that he told him, he supposed he could paint if he was riding post. He was appointed portrait-painter to queen Christina of Sweden; and by her recommendation, most of the illustrious persons in Europe sat to him for their pictures. Having an earnest desire to visit his friends in Holland, he left the court of Sweden much against the queen's inclination, and died soon after at the Hague, where, it is suspected that he was poisoned. This happened in 1656, when he was only thirty-five. A singular adventure happened to him, as he passed through Germany. He was suddenly and violently taken ill at the inn where he lodged, and seeming to all appearance dead, was laid out as a corpse. His servants expressed the strongest marks of grief for the loss of their master; but consoled themselves, while they sat beside his bed, by drinking very freely. At last one of them said to his companions, 'our master was fond of his glass while alive, let us give him one glass now:' and raised up his master's head to pour the liquor into his mouth. Beek, on this opened his eyes; and by proper management and care recovered perfectly.

BEELE, a kind of pick-axe, used by the miners for separating the ores from the rocks in which they lie; and called a tubber by the miners of Cornwall. The iron part of it weighs about eight or ten pounds. Though it is steeled at each end, it wears out so fast, that it requires new points once a fortnight.

BEELIKE, or Beelich, a town of Prussia, in the duchy of Westphalia, with a Benedictine provostship. Twelve miles E. N. E. of Arensberg, and thirteen north-west of Brilon. Long. 8° 27′ E., lat. 51° 30′ N.

BEELZEBUB, Beelzebul. See Baalzebub.

BEEMAH, or Bewrah River (Bhima, terrific), rises in the mountains to the north of Poonah, not far from the source of the Godavery, and passes within thirty miles to the east of Poonah, where it is esteemed sacred. It is one of the principal rivers that join the Krishna, which it does near the town of Firozegur, in the province of Beeder. The length of its course, including the windings, may be estimated at 400 miles. The horses most esteemed by the Mahrattas, are those bred on the banks of the Beemah.

BEEMEN, or **Sheemen**, in astronomy, seven stars of the fourth magnitude, following each other, in the fourth flexure of the constellation Eridanus.

BEER', Beer'-house, Beer'-brewer. } Ger. and Dut. *bier*. Goldast thinks from *pyris*, beer being first made of pears. Vossius derives it from the Lat. *bibere*, to drink; Noel from *beor*, describing a kind of beverage made from honey. Johnson traces it to *bir*, Welsh, and adds, liquor made of malt and hops. It is distinguished from ale either by being older or smaller.

> Oh, let them come, and taste this *beer*,
> And water henceforth they'll forswear.
>
> *Thomas Nabbes, in Ellis.*

> Among those that were without the fort, and which were of the foresaid company of Captaine Ribault, there was a carpenter of threescore years olde, once a *bere-brewer*. *Hakluyt's Voyages.*

> Here's a pot of good double *beer*, neighbour; drink. *Shakspeare.*

> Flow, Welsted! flow, like thine inspirer, *beer*;
> Tho' stale, not ripe; tho' thin, yet never clear;
> So sweetly mawkish, and so smoothly dull;
> Heady, not strong; and foaming, tho' not full.
>
> *Pope.*

Beer is perhaps any fermented liquor made from a farinaceous grain, but generally from barley. It is, properly speaking, the wine of barley. Under the article **Ale**, we have entered upon the subject of brewing that article pretty generally. The only other species of beer is porter. See therefore, **Ale**, **Porter**, and **Brewing**. Small or Table Beer, we may here add, is usually made, particularly in quantity and for sale, by mashing with a fresh quantity of water what is left after the beer or ale wort is drawn off; and sometimes from a small quantity of malt brewed on purpose. Two parts of London table beer may be considered equivalent in strength to one of ale; but, according to the legal distinction, (59. Geo. III. c. 53. sect. 25.), all beer sold above the price of 18s. per barrell is deemed ale, or strong beer, and pays ale duty, viz. 10s. per barrel; and beer, of the price of 18s. per barrel, or under, exclusive of the duty, namely, 2s. per barrel, is considered as table beer within the meaning of the act.

The final gravity of table beer wort is usually from 11 to 12,50lbs. per barrel. Every brewer, however, fixes that final standard strength, which he finds most suitable to his trade.

Beer, in weaving, nineteen threads running through the whole length of the piece.

Beer, in ancient geography, a city twelve miles north of Jerusalem, on the road to Shechem; where Jotham the son of Gideon concealed himself from his bloody brother Abimelech.

Beer, or **Beer Elim**, a place in the country of the Moabites, where the Israelites dug wells. Numbers, xxi. 18.

Beer, **Beerjick**, **Bir**, or **Biradshick**, a town of Asiatic Turkey, in the government of Orfa, the ancient Thiar or Barsampse. It stands u a lofty eminence on the west bank of the phrates, which is here deep and rapid, a 130 yards broad. A bridge of boats convey ravans from Aleppo to Orfa at this point, which privilege a pontage is paid here. Nie says, it consists of 500 houses, protected citadel and a wall; but the whole place is in lapidated condition. It was long deemed pregnable, and is still considered a pla strength. Pococke notices a collection of an arms and armour, which he saw here. Am these were various sorts of foil arrows: n of them pointed with iron, and to the extre of some, combustible matter, made up i triangular form, was attached, which bein nited was carried into the town which it intended to set on fire. There was anothe to which iron bottles, or cases filled with si combustibles, were fixed, which were infl previous to their discharge. The cross- were straight, and were about five feet There were also a variety of slings. Some w are of opinion that these arms were Roma they correspond with the description give them by Ammianus Marcellinus. Conside trade was carried on to Bagdad by means of sels descending the river. Beer is sixty-s miles from Orfa; 115 south-west of Diarb and 114 north-east of Aleppo. It is the great roughfare from Aleppo to Diarbekir and Pe

Beeralston, an ancient borough in the co of Devon, England, disfranchised by the re bill in 1832.

Beer, Eager, is used by calico-pri chemists, lapidaries, scarlet-dyers, vinegar chants, white-lead men, &c.

Beer La-ha-roi, in ancient geography, a between Kadesh and Shur, south of Canaan, w the angel appeared to Hagar. Gen. xvi. 14

Beer Machines, are contrivances by m of which that liquor is drawn from three or casks at once, and delivered from cocks p close together in the bar of a tavern or other venient place above the cellar. These mac are nothing else than an assemblage of sma pumps, whose suction pipes communicate the casks containing the beer: they are now common in London and other large towns. internal part of the machine consists of fo pumps, firmly fixed between two blocks of and in each of which semicylindric excav are made to contain the barrels: these are together and fastened ... the case enclosin pumps by two screws between each barrel, plainly in the figure. The upper part of th of the pumps is a half cylinder, and has four openings in it, corresponding to the axis of pump; in these openings the levers which gi tion to the pump buckets move: they are be angular point being the centre on which move: a short arm has the pump rod joi it, and to a long one is affixed the handle. centre pins of the levers are supported on a of wood fixed in the case nearly in the its cylindric head; the pump rod is divid two branches; at their lower ends which r a pin, joining them to the bucket rod, th which the pin passes. The rod is continued as well as below the joint: the lower part goes into the pump, and the upper slides through a brass collar fixed to the back of the case; this collar is included between the two branches of the pump rod: its use is to confine the bucket rod to move truly vertical, while the pump rod being attached to it at only one point can obey the irregular motion occasioned by the lever describing a circular arc. The bucket rod passes through a stuffing box in the top of the pump, through which it moves easily, and yet without permitting the escape of any liquor by it: below this it is screwed into the branches of the bucket, which has a valve in it, and is surrounded by soft leather, which makes it fit the barrel of the pump without leaking. In the bottom of the barrel another valve, similar to that in the bucket, is placed, and a close tube leads from it to a leaden pipe, bringing the liquor from the casks in the cellar. At the upper part of each barrel a small leaden pipe is soldered: these pipes are bent upwards, and come through the side of the case. Sometimes the pipes leading from the two first pumps are brought into one, and both deliver through the same spout; for the convenience of mixing two kinds of beer. The operation of the pumps is exactly the same as the common sucking pump. Some beer-pumps (as those invented by Mr. Rowntree of Blackfriar's-road) are of a more complex construction.

BEERING'S or Behring's Bay, is situated in the sixtieth degree of latitude, on the west coast of North America, and received this name from captain Vancouver, in honor of Vitus Behring, who visited these shores in 1740, and anchored in a large bay, the position of which was not correctly ascertained. Captain Cook assigned this appellation to a different part of this shore; but as he only saw it at a distance, he could not perceive the tract of low ground that stretches from the base of the mountains which he supposed to bound the bay. Vancouver found that this low land precluded all appearance of a bay, in the place which Captain Cook had assigned to it; and therefore, as the name was intended to be applied to the bay in which Behring anchored, he transferred it to that which Mr. Dixon had previously called Admiralty Bay. There is no other Bay, he tells us, between Cape Suckling and Cape Fairweather, in which Behring could have found shelter.

Beering's Island, an island in the North Pacific ocean, which is sometimes classed with the Aleutian chain, of which it may be considered the most western link. It extends 104 miles in length, by fifteen in breadth; is mountainous and sterile. The west coast is elevated, the northern point low land; the principal mountains, called the Hanavoy ridge, consisting of granite and sandstone, contain many caverns. There are two bays on the coast, wherein vessels in the fur trade winter, but they are shallow, of dangerous access, and exposed to the north winds; the climate is rigorous. No wood grows here, but various kinds of plants are common. Several small streams issue from the lakes and pools near the shore. Minerals of value are said to have been found, and pieces of native copper are cast ashore after storms. The surrounding seas abound in whales; phocæ are numerous on the shores, and multitudes of sea otters; black and blue foxes formerly inhabited the island. The sea cow was an object of pursuit, but so incessantly sought after, that the species is either extinct or deterred by danger from approaching the island, as none have been seen on it since the year 1708. When the sea otter, whose numbers have also been greatly diminished, disappears in March, it is replaced by the sea lion, because in the northern regions animals frequent particular places in the most regular succession. This island was discovered in 1740, or 1741, by Vitus Beering, a Dane, a commodore in the Russian service. The latitude of this island is about 55° N., and the long. 167° E.

BEEROO, a country of central Africa, to the south of Bambara, and having Ludamar on the west. The government is in the hands of the Moors. It is probably very populous, since Walet, the capital was reported to be larger than Tombuctoo; but the interior is little known.

BEERSHEBA; from באר, a well, and שבע, he sware, or שביעה, an oath; a city to the south of the tribe of Judea, adjoining to Idumea, where, anciently, Abraham and Isaac swore friendship to Abimelech. It stood twenty miles south of Hebron, and forty-two in the same direction from Jerusalem. When Eusebius wrote, A. D. 315, it was still a considerable town, *κωμη μεγιστη*, garrisoned by Roman soldiers. The boundaries of the Holy Land are often described in Scripture as extending from Dan to Beersheba (2 Sam. xvii. 11); and after the separation of the kingdoms of Judah and Israel, the boundaries of the former are mentioned as from Beersheba to Mount Ephraim. The Beersheba which is described by the historian of the Crusades (Jacobus de Vitriaco, Hist. Hieros. 36; Gulielmus Tyrius, xiv. 22), as situated ten or twelve miles from Ascalon, is a different place.

BEES Head (St.), a lofty promontory, with a light-house on the top of it, about five miles from Whitehaven, to which it is connected by one continued range of rocks rising perpendicularly from the beech.

Bees, Saint, a town in the county of Cumberland, between Whitehaven and Egremont, noted for its public school. It had once a nunnery, the church of which is still used, and the free grammar-school has a good library. The schoolmaster is appointed by the provost and fellows of Queen's College, Oxford. The parish is of great extent, and appears, from its ruins, to have been fortified by the Romans at all the convenient landing places.

BEESTINGS, Breastings, or perhaps more properly Beastings, a term used by country people for the first milk taken from a cow after calving. The beestings are of a thick consistence, and yellow color, seemingly impregnated with sulphur. Dr. Morgan imagines them peculiarly fitted and intended by nature to cleanse the young animal from the recrements gathered in its stomach and intestines, during its long habitation in utero. The like quality and virtue he supposes in women's first milk after delivery; and hence infers the necessity of the mother's suckling her own child, rather than committing it to a nurse whose first milk is gone.

BE'ET, *n. s.* Lat. *beta*, the name of a plant. See Beta.

Beet, in botany. See Beta.

BEE'TLE, *v.* & *n.*
Beet'ling,
Beetle'brows,
Beetle'browed,
Beetle'headed,
Beetle'stocked.

Beetle, an insect, the name probably derived from the word *beat*, because it heavily beats the air with its wings. *Beetle*, a mallet; a three-man-*beetle*, was one so heavy that it required three men to manage it, two at the long handles, and one at the head. *Beetleheaded*, probably in allusion to this it means a thick and heavy skull. *Beetlebrow* is an overhanging heavy brow. To *beetle* is to hang over like the top of a cliff.

BEETHOVEN (Louis Von), born in Bonn, 1772, was the son of a tenor singer in that place, (according to Fayolle's Dictionary of Musicians, a natural son of Frederick William II., king of Prussia). His great talent for music was early cultivated. He astonished, in his eighth year, all who heard him, by his execution on the violin. In his eleventh year he played Bach's Wohl Temperirtes clavier, and, in his thirteenth, composed some sonatas. These promising appearances of great talent induced the then reigning elector of Cologne to send him, in 1792, in the character of his organist, to Vienna, that he might accomplish himself there in composition, under the instruction of Haydn. Under Haydn and Albrechtsberger he made rapid progress, and became, likewise, a great player on the piano forte, astonishing every one by his extempore performances. In 1809 he was invited to the new court of the king of Westphalia, at which several men of distinction, and among them his pupil the archduke Rodolph, bishop of Olmütz, who persuaded him to remain. He composed his principal works after 1801. A few years before his death, a cold, caught by composing in the open air, produced a deafness, which became troublesome. Instrumental music has received from his compositions a new character. Beethoven united the humor of Haydn with the melancholy of Mozart, and the character of his music most resembles Cherubini's. Besides his great symphonies and overtures, his quintetts, quartetts, and trios for stringed instruments, his numerous sonatas, variations, and other pieces for the piano forte, in which he shows the great richness of his imagination, he also composed vocal music, but with less success. He died March 26, 1827, near Vienna, in the greatest poverty.

Beetle, in entomology. See Attelabus, and Scarabæus.

Beetle, in mechanics, is likewise called a stamper, and by paviours a rammer.

BE'FALL. Be and fall. See Fall.

BE'FIGHT. Be and fight. See Fight.

BE'FIT. Be and fit. See Fit.

BE'FOAM. Be and foam. See Foam.

BE'FOOL. Be and fool. See Fool.

BE'FORE,
Before'hand,
Before'time.

Compounded of be and fore, written differently in different eras of our literature, as *bifore*, *byfore*, *beforn*, and *beforne*. When referring to time, it signifies anterior or prior; to place in front, or in presence of; and to the state of the mind it expresses preference.

His profession is to deliver precepts necess eloquent speech; yet so, that they which m them, may be taught, *beforehand*, the skill of s ing. H

In this realm of England, *before* Normans, y *fore* Saxons, there being Christians, the chief p of their souls were bishops. *Id. Eccle*

Heavenly born,
Before the hills appear'd, or fountain flow'd,
Thou with eternal wisdom didst converse.

You tell me, mother, what I knew *befor*
The Phrygian fleet is landed on the shore.
D

Your soul has been *beforehand* with your bod
And drunk so deep a draught of promis'd bliss,
She slumbers o'er the cup.

I have not room for many reflections, the last author has been *beforehand* with me, in its moral. A

BEFORT, a ci-devant district of Franc the frontiers of Switzerland, now comprehe in the department of the Upper Rhine. Th comparatively sterile, it has excellent iron m these, and the forges connected with them ploy a large portion of its population.

Befort, or Belfort, once the capital county, and now of an arrondissement, is a but strong town, seated on the Savoureuse. ceded to France by the treaty of Westpha 1648. It is important as being a pass fro sace to Franche Comté; and it is, by its c position, enabled to carry on a good trade wines of Burgundy and Champagne. It tuated at the point of meeting of several roads, viz. of two from Paris, two from Sw land, one from Strasburg, and one from Lor The county and town of Befort were cede Austria to France in 1648. In 1659, XIV. granted them to cardinal Mazarin; a 1781 they were obtained by the duke of V tinois, who lost them at the Revolution. fisheries and forests, as well as the mine considered very productive. Befort is thirty-five miles south-west of Colmar, seventy in the same direction from Stras Lat. 47° 38′ N., long. 6° 57′ E.

BE'FRIEND. Be and friend. See Fr

BE'FRINGE. Be and fringe. See Fr

BEG', *v.*
Beg'gar, *v.*, *n. s.*, & *adj.*
Beg'gable, *v.*
Beg'gary,
Beg'ging, *n.*
Beggar'ing,
Beggar'liness,
Beggar'ly, *adj.* & *adv.*
Beggar'fear,
Beggar'maid,
Beggar'man,
Beggar'woman.

Ger. *begg* It is pro a corrupti *baggar*, be says the E clopædia M politana, be carry with *bags*, into they put the that may bestowed them. To beg, is to ask, to entreat, with to obtain any object. It is the gentle fo persuasion opposed to violence and de To *beggar*, is to reduce to a state of depen on the gratuitous aid of others. To brin the condition of imploring favor.

And she was clad full porely,
All in an old torne courtpy,

As she were all with dogges torne,
And both behind and eke beforne
Clouted was she *beggerly*. *Chaucer.*

He raiseth up the poor out of the dust, and lifteth up the *beggar* from the dunghill, to set them among princes. *Samuel.*

Touching God himself, hath he revealed that it is his delight to dwell *beggarly*? And that he taketh no pleasure to be worshipped, saving only in poor cottages? *Hooker.*

So as their *begging* now them failed quite;
For none would give, but all men would them wyte;
Yet would they take no pains to get their living,
But seeke some other way to gaine by giuing,
Much like to *begging*, but much better nam'd;
For many *beg*, which are thereof asham'd.
Spenser. Mother Hubbard's Tale.

On he brought me into so bare a house, that it was the picture of miserable happiness and rich *beggary*. *Sidney.*

Well, whiles I am a *beggar*, I will rail,
And say,—there is no sin, but to be rich;
And being rich, my virtue then shall be,
To say,—there is no vice but *beggary*! *Shakspeare.*

For her person
It *beggar'd* all description; she did lie
In her pavilion, cloth of gold, of tissue,
O'er-picturing Venus. *Id.*

I will ever, though he do shake me off
To *beggarly* divorcement, love him dearly. *Id.*

He finds it his best way to be always craving, because he lights many times upon things that are disposed of or not *beggable*. *Butler.*

——— thy suppliant
I *beg* and clasp thy knees; bereave me not,
Whereon I live, thy gentle look, thy aid,
Thy counsel in this uttermost distress. *Milton.*

What subjects will precarious kings regard?
A *beggar* speaks too softly to be heard. *Dryden.*

These shameful *beggars* of principles, who give this precarious account of the original of things, assume to themselves to be men of reason. *Tillotson.*

Beg, a place in Ayrshire, in the parish of Galston; celebrated for being one of the retreats of the patriotic Sir William Wallace, where, in a rude fortification, attended by only fifty of his friends, he obtained a complete victory over 200 Englishmen.

Beg, or Bey, in the Turkish government. See Bey. Beg is more particularly applied to the lord of a banner, called in the Turkish language sangiak beg. A beg has the command of a certain number of the sipahis, or horse, maintained by the province under the denomination of timariots. All the begs of a province obey one governor-general, called begler-beg, or beyler-beg, q. d. lord of lords, or of the beys of the province.

Begs, or Beghs, of Egypt, generals who have the command of the militia or standing forces of the kingdom; and are appointed to secure the country from the Arabs, as well as to protect the pilgrims in their annual expeditions to Mecca. The begs, several of whom are descended from the ancient race of the Mamalukes, are very rich and powerful, maintaining 500 fighting men each for their own guard, and the service of their court. On discontents, they have frequently risen in rebellion. They are often at variance with the bashaw, whom they have more than once imprisoned and plundered.

BEGA (Cornelius), painter of landscapes, cattle, and conversations, was born at Haerlem in 1620, and was the disciple of Adrian Ostade Falling into a dissipated way of life, he was disinherited by his father: for which reason he cast off his father's name, Begeyn, and assumed that of Bega; his early pictures being marked with the former, and his later works with the other. He had a fine pencil, and a delicate manner of handling his colors, so as to give them a look of neatness and transparence; his performances are so much esteemed in the Low Countries as to be placed among the works of the best artists. He caught the plague from a woman with whom he was deeply enamoured, and died a few days after her, aged forty-four.

Bega, St. an Irish virgin, who is said to have lived a solitary life of devotion at the spot in the county of Cumberland, where the town of St. Bees was afterwards built, and thus named after her.

BEGALLED, be and galled. See Galled.

BEGAWED, be and gawed. See Gawed.

BEGAY, be and gay. See Gay.

BEGEMDER, a fertile province of Abyssinia, bounded by Dembea on the west, Samen on the north, Angot on the east, and Amhara on the south. It includes the dependency of Lasta, and its length has been stated at 180 miles, and its breadth at sixty. There is a much greater proportion of what may be called level ground here, than in almost any of the other provinces in this alpine region. The mountains abound with iron, and afford good pasturage for the noble herds of cattle, with which Begemder is stocked. Mr. Bruce was informed that it was capable of raising 45,000 effective cavalry. The southern boundary is full of deep and rugged ravines.

BE'GET, Beget'ter, Beget'ting, Be'got, Begot'ten. } Be and get. Ang.-Sax. begettan, gettan. To obtain, to produce as effects; to produce as accidents; to generate, to procreate; to become the father of, as of children.

A yonge man called Melibeus, mighty and riche, *begate* upon his wif, that was called Prudence, a daughter which that called was Sophie. *Chaucer.*

——— next he did *beget*
An infinite increase of angels bright,
All glist'ning glorious in their Maker's light.
Spenser

But first come the hours, which we *begot*
In Jove's sweet paradise, of day and night,
Which do the seasons of the year allot. *Id*

——— see here be all the pleasures
That Fancy can *beget* on youthful thoughts,
When the fresh blood grows lively, and returns
Brisk as the April buds in primrose season.
Milton.

Love is *begot* by fancy, bred
By ignorance, by expectation fed. *Granville.*

Men continue the race of mankind, commonly without the intention, and often against the consent and will, of the *begetter*. *Locke.*

My whole intention was to *beget*, in the minds of men, magnificent sentiments of God and his works. *Cheyne.*

Son of the Father, first *begotten* Son!
Ere the short measuring line of time begun,
The world has seen thy works, and joy'd to see
The bright effulgence manifest in thee. *Parnell.*

BEGGHE, (St.), the founder of the order of the Beguards, and probably of that of the Beguines. She flourished about A. D. 680.

BEGHERME, an extensive country in the eastern part of central Africa, little known. It is said to have Bornou on the north, Bergoo on the east, and Cassina on the west, and to be governed by a sultan of its own, dependent on that of Bornou; according to Dr. Seetzen it has lately been annexed to Bergoo, which is also dependent upon Bornou.

BE'GILT, be and gilt. See Gilt.

BE'GIN, *v.* & *n.*
Begin'ner,
Begin'ning,
Begin'ningless.
} I began or begun; I have begun. Sax. beᵹinnan, from be, or by to, and ᵹanᵹan, ᵹaan, or ᵹan, to go; applied to the first motion towards any act, purpose, or design; to enter upon existence, to have its original.

Mindes he our tears; or ever moued his eyen?
Wept he for ruth? or pitied he our loue?
What shall I set before, or where *begin?* *Surrey*

Thus heaping crime on crime, and grief on grief,
To loss of love adjoining loss of friend,
I meant to purge both with a third mischief,
And, in my woe's *beginner*, it to end. *Spenser.*

They *began* at the ancient men which were before the house. *Ezekiel.*

By peace we will *begin.* *Shakspeare.*

I'll sing of heroes and of kings.
Begin my muse! *Cowley.*

They are, to *beginners*, an easy and familiar introduction; a mighty augmentation of all virtue and knowledge in such as are entered before. *Hooker.*

———— if ye know,
Why ask ye, and superfluous *begin*
Your message, like to end as much in vain?
Milton.

Begin every day to repent; not that thou shouldst at all defer it; but all that is past ought to seem little to thee, seeing it is so in itself. *Begin* the next day with the same zeal, fear, and humility, as if thou hadst never *begun* before. *Taylor.*

The air was soon after the fight *begun*
Far more inflam'd by it than by the sun.
Marvell.

Youth, what man's age is like to be, doth show;
We may our end by our *beginning* know. *Denham.*

By viewing nature, nature's handmaid, art,
Makes mighty things from small *beginnings* grow:
Thus fishes first to shipping did impart,
Their tail the rudder, and their head the prow.
Dryden.

The understanding is passive; and whether or not it will have these *beginnings*, and materials of knowledge, is not in its own power. *Locke.*

These systems are so many enchanted castles; they appear to be something—they are nothing but appearances: like them, too, dissolve the charm, and they vanish from the sight. To dissolve the charm, we must *begin* at the *beginning* of them: the expression may be odd, but it is significant.
Bolingbroke. Study of History.

Rapt into future times, the bard *begun*,
A virgin shall conceive. *Pope.*

I have taken a list of several hundred words in a sermon of a new *beginner*, which not one hearer could possibly understand. *Swift.*

BE'GIRT,
Be'girted.
} Saxon *begierdan*,
gyrdan; to close in roun
be and gird, to bind with a girdle; to
with a siege; to beleaguer; to block u

Begird th' Almighty throne,
Beseeching, or besieging.

Or should she, confident
As sitting queen adorn'd on beauty's thr
Descend, with all her winning charms be
T' enamour.

At home surrounded by a servile crowd,
Prompt to abuse, and in detraction loud:
Abroad *begirt* with men, and swords, and
His very state acknowledging his fears.

BEGLERBEG, a governor of one of
cipal governments in the Turkish em
next in dignity to the grand vizier.
beglerbeg the grand seignior gives thre
or staves, trimmed with a horse-tail,
guish them from the bashaws, who have
and from simple begs, or sangiac begs,
but one. Five of the beglerbegs have t
viziers, viz. those of Anatolia, Babylo
Romania, and Buda. The beglerbe
with great state, and a large retinue,
in the camp, being obliged to bring a
every 5000 aspers of rent which th
Those of Romania brought 10,000 effe
into the field. The beglerbegs are b
most independent, and have under thei
tion several sangiacs or particular gov
and begs, agas, and other officers,
them.

BEGLERBEGLIK, or Beglierbe
province or government of a beglerbe
are of two sorts, viz. 1. Beglerbegli
which have a certain rent assigned o
cities, countries, and signiories allott
principality: and are in number tw
viz. those of Anatolia, Caramania, I
Damascus, Aleppo, Tripoli, Trebizo
Temeswar, &c. 2. Beglerbeglik, sa
maintenance of which is annexed a
rent, collected by the grand seignior's of
the treasure of the empire. These are
ber six, viz. those of Cairo, Babylon, &

BE'GNAW. Be and gnaw. See G

BE'GONE. Be and gone. Decaye
Far advanced, or sunk deep, either i
woe. Also, the imperative *be*, and the
ticiple *gone*; as go, depart; generally
impetuosity or displeasure. As, Get
sight.

I was a lusty one
And faire, and riche, and yonge, and w

And witteth well, that one of the
Is with treasour so full *begone*,
That if ye happe thereupon,
Ye shall be riche men for ever.

Begone, I will not hear this vain excuse
But, as thou lov'st thy life, make speed fr

Begone. the goddess cries with stern
Begone! nor dare the hallow'd stream t
She fled, for ever banish'd from the tra

Ungrateful wretch! *begone*, and no longer pollute my dwelling with thy baseness; *begone*, and never let me see thee again. Go from my doors; and the only punishment I wish thee, is an alarmed conscience, which will be a sufficient tormentor. *Goldsmith.*

BEGONIA, in botany, a genus of plants of the polygamia monœcia class; the characters of which are these: the flowers are of two kinds; the one is the male flower, composed of four leaves, some broader, and others narrower; the other, which produces the embryo fruit, is of the rosaceous sort, and is composed of several petals, arranged in a circular form, and placed on a foliated cup, which finally becomes a trigonal alated fruit, divided into three cells, and containing small seeds. Willdenow describes twenty-five species of this genus, which belong principally to the West India Islands. See *Transactions of the Linnæan Society*, vol. i.

BE'GORED. Be and gored. See GORE.

BE'GRAVE. Be and grave. See GRAVE.

BE'GRIME. Be and grime. See GRIME.

BE'GRIPE. Be and gripe. See GRIPE.

BE'GROW. Be and grow. See GROW.

BE'GRUDGE. Be and grudge. See GRUDGE.

BEGSHEHRI (Beïshehri) a town and captaincy in the Pachalic of Karaman-îlî, Anatolia. The town is protected by a castle built by Alá-ud-dín, the Seljúké sultán in the twelfth century. This district contains 122 smaller, and 12 larger fiefs, called by the Turks Zímárets and Ziyámets.

BEGUARDS, or BEGHARDS, the third order of the religious of St. Francis in Flanders. They were established at Antwerp in the year 1228, and took St. Begghe for their patroness, whence they had their name. From their first institution they employed themselves in making linen cloth, each supporting himself by his own labor, and united only by the bonds of charity, without having any particular rule. But pope Nicholas IV. having confirmed that of the third order of St. Francis in 1289, they embraced it in 1390. They were greatly favored by the dukes of Brabant, particularly John II. and John III. who exempted them from all contributions and taxes. See FRANCISCANS.

BEGUE, an old term for the natural mark in the mouth of a horse, which distinguishes his age. It is probably derived from the French, in which the same word signifies a stutterer.

BEGUE (Lambert le), the founder or restorer of the order of the Beguines, flourished about the end of the twelfth century.

BE'GUILE,
BE'GUILERS,
BE'GUILING,
BE'GUILTY.
} Be and guile. *Guile*, from *gewiglian*, and wile, from *wiglian*, to deceive, to allure into a snare; the worst kind of wickedness; hence the general term guilt. The *beguilers* and the *beguiled* divide our species, with the exception of those who are abused and hated by both, because they have wisdom without knavery, and goodness without folly, qualities equally detestable to the deceivers and the deceived.

> This miller smiled at hir nicetee,
> And thought, all this n' is don but for a wile,
> They wenen that no man may hem *begile*.
> *Chaucer.*

> For often he that will *begile*,
> Is *guiled* with the same *guile*.
> And thus the *guiler* is *beguiled*. *Gower.*

When we escape from a little wile, and know the *beguiler*, we thinke that we are *beguiled* already with other greate wiles. *Golden Book.*

> Her lips, most happy each in other's kisses,
> From their so wisht imbracements seldome parted,
> Yet seem'd to blush at such their wanton blisses;
> But, when sweet words their ioyning sweet disparted,
> To th' eare a dainty musique they imparted,
> Upon them fitly sate delightful smiling,
> A thousand smiles with pleasing stealth *beguiling*:
> Ah, that such shows of ioyes should be all ioyes exiling. *Spenser.*

> And often did *beguile* her of her tears,
> When I did speak of some distressful stroke
> That my youth suffered. *Shakspeare.*

> Sweet, leave me here awhile;
> My spirits grow dull, and fain I would *beguile*
> The tedious day with sleep. *Id.*

By easy commutations of publick penance, for a private pecuniary mulct, thou dost at once *beguilty* thine own science with sordid bribery, and embolden the adulterer to commit that sin again without fear. *Bishop Sanderson.*

> Some cursed fraud
> Of enemy hath *beguiled* thee, yet unknown,
> And me with thee hath ruin'd, for with thee
> Certain my resolution is to die. *Milton.*

Whosoever sees a man, who would have *beguiled* and imposed upon him by making him believe a lye, he may truly say, that is the man who would have ruined me. *South.*

> While o'er his lips her lovely forehead bow'd,
> Won by his grateful eloquence, which sooth'd
> With sweet variety the tedious march,
> *Beguiling* time. *Glover. Leonidas.*

BEGUINAGE, the place of residence of a society of Beguines. See next article. The finest beguinage in Flanders was that of Malines. That of Antwerp was very spacious, and had two separate churches.

BEGUINES, a congregation of nuns, which must not be confounded with the Beghards, founded either by St. Begghe, or by Lambert le Begue. They were established first at Liege, and afterwards at Nivelle in 1207; and from this last settlement sprang the great number of Beguinages, which are spread over all Flanders, and which have passed from Flanders into Germany. In the latter country, some of these religious fell into extravagant errors, persuading themselves that it was possible, in the present life, to arrive to the highest perfection, even to impeccability, and a clear view of God; in short, to so eminent a degree of contemplation, that there was no necessity, after this, to submit to the laws of mortal men, civil or ecclesiastical. The council of Vienne, in 1113, condemned these errors, and abolished the order of Beguines; permitting, nevertheless, those among them, who continued in the true faith, to live in chastity and penitence, either with or without vows. It is by favor of this latter clause, that there still subsist (or at least subsisted till lately) so many communities of Beguines in Flanders; who, subsequently to the council of Vienne, conducted themselves with so much wisdom and piety, that pope John XXII. by his decretal, which explains that of his predecessor made in the council of Vienne, took them under his protection; and Boniface VIII. in another, exempted them from the secular tribunal, and put them under the jurisdiction of the bishops. There was scarce a town in the Low Countries in which there was not a society of Beguines; and even at Amsterdam there was a very flourishing one. These societies consisted of several houses placed together in one enclosure, with one or more churches, according to the number of Beguines. There was in every house a prioress, or mistress, without whose leave they durst not stir out. They made a sort of vow, in the following terms: 'I ——— promise to be obedient and chaste as long as I continue in this Beguinage.' They observed a three years noviciate before they took the habit. They were formerly habited in different manners; some in gray, others in blue; but of late they all wore black. When they went abroad, in Amsterdam, they put on a black veil. Formerly they had as many different statutes as there were societies. In the visitations of the year 1600 and 1601, by the archbishop Matthias Hovius, they were forbidden, under the penalty of a fine, to have lap-dogs.

BEHABAN, a town of Persia, in the province of Fars. It is the capital of the district of Khogilæa, and is pleasantly situated in an extensive and highly cultivated valley, which is intersected by the rivers Zab and Jerahi. The walls are three miles in circumference, and the population is 10,000. It is 153 miles from Shiraz.

BEHALF. This word Skinner derives from *half*, and interprets it, for my half; as, for my part. It seems, to be rather corrupted from *behoof*, profit; the pronunciation degenerating easily to *behafe*; which, in imitation of other words so sounded, was written, by those who knew not the etymology, *behalf*. For my or your part or share, or sake. Whatever is done in favour, for the sake of, either in support or vindication.

> Yet this I say in hir *behalfe*
> If Helen were hir leeke,
> Sir Paris need not to disdaine
> Hir through the seas to seeke. *Turberville.*

He might, in his presence, defy all Arcadian knights, in the *behalf* of his mistress's beauty. *Sidney.*

> Michael this my behest have thou in charge,
> Take to thee from among the Cherubim,
> Thy choice of flaming warriors, lest the fiend,
> Or in *behalf* of man, or to invade
> Vacant possession, some new trouble raise;
> Haste thee, and from the paradise of God
> Without remorse drive out the sinful pair. *Milton.*

> Were but my heart as naked to the view,
> Marcus would see it bleed in his *behalf*. *Addison.*

Never was any nation blessed with more frequent interpositions of divine providence in its *behalf*. *Atterbury.*

BE'HANG. Be and hang. See Hang.

BE'HAPPEN. Be and happen. See Happen.

BE'HATED. Be and hate. See Hate.

BEHA'VE, } Be and have; be and haviour.
Beha'ving, } Goth. haban. Ang.-Sax. habban.
Beha'viour, } See Have and Haviour.

To govern, to subdue, to discipline, its ancient and now obsolete sense. To carry, to act, to conduct ones' self. Manners, carriage, gesture, appearance. It is taken in either a good o sense, as he *behaved* well or ill.

The beautiful prove accomplished, but not of spirit; and study, for the most part, rather bel than virtue.

He who adviseth the philosopher, altogeth voted to the Muses, sometimes to offer sacrifice altars of the Graces, thought knowledge im without *behaviour*.

> But who his limbs with labours, and his min
> *Behaves* with cares, cannot so easy miss.
> *Faerie*

> With such sober and unnoted passion
> He did *behave* his anger ere 'twas spent,
> As if he had but prov'd an argument. *Shak*

One man sees how much another man is when he dedicates his *behaviour* to love. *Shak*

Get ye all three into this box-tree; Mal coming down this walk; he has been yonde sun, practising *behaviour* to his own shadow, th hour: observe him for the love of mockery. *Shak*

> To their wills wedded, to their errours slave
> No man like them, they think, himself *behave*

We so live, and so act, as if we were secure final issue and event of things, however, w *behave* ourselves. *Att*

We are not, perhaps, at liberty to take for g that the lives of the preachers of Christianity w perfect as these lessons; but we are entitled t tend, that the observable part of their *behaviou* have agreed in a greater measure with the which they taught.

BE'HEAD, } Be and head. See He
Beheading, } To head, or behead, take off, cut off, strike off, the head: a Ga accomplishment, greatly in vogue durin Revolution.

His *beheading* he underwent with all Ch magnanimity. *Cla*

Mary, queen of Scots, was *beheaded* in the of queen Elizabeth.

I think it was Caligula who wished the wh of Rome had but one neck, that he might *behe* at a blow. *Sp*

She (Anne Boleyn) was *beheaded* by the tioner of Calais, who was sent for, as more than any in England.

> On each side they fly,
> By chains connext, and, with destructive swee
> *Behead* whole troops at once.

Lord Clarendon relates that he (marquis of was condemned to be hanged, which was per on the same day; on the contrary, Burnet, Wo Heath, Echard, concur in stating that he *headed*; and that he was condemned upon the day, and executed on the Monday.

Beheading, a capital punishment, w the head is severed from the body by the of an axe, sword, or other cutting instr Decollatio, or beheading, was a military p ment among the Romans. Among th head was laid on a cippus, or block, plac pit dug for the purpose; in the army, the vallum; in the city, without the wall place near the porta decumana. Prepara the stroke, the criminal was tied to a stak whipped with rods. In the early ages th was given with an axe, and was but c performed; but in after-times with a which was thought the more reputable ma dying: when the executioners grew more and took off the head with one circular stroke. St. Paul thus says that the magistrate 'beareth not the sword in vain.' In England, beheading is the punishment of nobles, being reputed not so disgraceful as hanging. In France, during the revolutionary government, the practice of beheading by an instrument called a guillotine (so denominated from its inventor, Dr. Guillot,) was very general. It resembles an instrument long ago used for the same purpose in Scotland, called the maiden, and which is still preserved in Edinburgh. See Guillotine and Maiden. It is doubtless the most speedy, and least painful, of capital punishments.

BE'HEARD, *be* and *heard*, past participle of the verb to hear. See Hear.

BEHEM (Martin), an eminent geographer of the fifteenth century, was born at Nuremberg. Assuming the existence of a western continent, he is said to have applied, in 1459, to Isabella, regent of the duchy of Burgundy and Flanders, to supply him with a vessel, with which he discovered the island of Fayal, one of the Azores, or at least established a colony of Flemings there, for the discovery is claimed for Gonsalvo Velho, a Portuguese. After residing at Fayal for twenty years, in 1484 (eight years before the expedition of Columbus), according to letters of his still preserved, it is said, in the archives of Nuremberg, he induced John II. of Portugal, to intrust him with the command of an expedition to the south-west. He is said, at this time, to have discovered Brasil, and even to have sailed to the Straits of Magellan, which he mathematically delineated on a map. These letters bear date 1486; and the event is related in the Latin Chronicle of Hartman Schedl, and by Peter Mateus, who wrote on the canon law two years before the expedition of Columbus. His discoveries are likewise referred to by Cellarius and Riccioli, the first of whom mentions the service which his charts afforded Magellan; and the latter asserts that Columbus obtained direct information from Behem in Madeira. He was knighted by the king of Portugal, and otherwise honored as a person of great merit; although these rewards some writers attribute to his discovery of Congo. He died at Lisbon in in July 1506, leaving no works behing him, except the chart before mentioned, and a terrestrial globe, still in the library of Nuremberg, &c. Dr. Robertson treats the story of his discovery of America as a legend; it is certainly strange that he should leave the world without more formally claiming it; but the memoir of M. Otto, in vol. ii. of the American Philosophical Transactions, may be profitably consulted on this curious question.

BEHEMOTH, *n. s.* *Behemoth*, in Hebrew, signifies beasts in general, particularly the larger kind, fit for service. But Job speaks of an animal behemoth, and describes its properties. Bochart has taken much care to make it the hippopotamus, or river-horse. Sanctius thinks it is an ox. The fathers suppose the devil to be meant by it. *Calmet.*

Behold now *behemoth*, which I made with thee; he eateth grass as an ox. *Job.*

Scarce from his mould
Behemoth, biggest born of earth, upheav'd
His vastness: fleec'd the flocks and bleating rose
As plants: ambiguous between sea and land,
The river-horse and scaly crocodile. *Milton.*

Behold! in plaited mail
Behemoth rears his head. *Thomson.*

Behemoth is generally supposed by commentators, as well as natural historians, to mean either the elephant or the river-horse. The late Mr. Bruce endeavours to prove that the rhinoceros is the animal meant by this word. Others think that this word denotes the same animal with mammoth, a huge creature, generally supposed to be extinct; but whose bones are frequently found in marshy grounds in Asia and America. See Mammoth. According to the Jewish rabbin, God, in the beginning, created two behemoths, male and female; the female was killed and salted to be reserved as an entertainment for the faithful whenever the Messias shall come; the male is still living, and when the last day arrives, God will kill it, and give it to the Israelites, who shall then rise from the dead. Calmet relates that the Jews are still so convinced of these extravagant traditions, that it is a common custom to swear by the share that they are to have of Behemoth hereafter. Job xl. 15. See *Calmet's Dictionary*, and *Harmer's Observations on Scripture*, vol. ii.

BE'HELD, participle passive from Behold, which see.

All hail! ye virgin daughters of the main!
Ye streams, beyond my hopes, *beheld* again! *Pope.*

BE'HEN, Ben. Valerian roots; a name of the silene inflata or bladder campion

BE'HEST, Be and hest; Goth. *haitan;* A Shætan, *hatan;* Dutch, *heten;* Germ. *heissen.* command; precept; mandate; the declared will of any personage, power, or sovereignty.

To breken forword is not min entente
Behest is dette, and I would hold it fayn
All my *behest* I can no better sayn. *Chaucer.*

Her tender youth had obediently lived under her parents' *behests*, without framing, out of her own will, the forechoosing of any thing. *Sidney.*

To visit oft those happy tribes,
On high *behests* his angels to and fro
Pass'd frequent. *Milton.*

In heav'n God ever blest, and his divine
Behests obey, worthiest to be obey'd. *Id*

The plain, by slow degrees, shall rise
Higher than erst had stood the summit hill;
For time must nature's great *behest* fulfil. *Prior.*

BEHET, Behi'ght, Beho'te, Beho'ten, Behe'teer, See Behest. From hatan, to promise, is the primary sense. It also signifies to entrust; to commit; and sometimes to name, or call. See Hight. Likewise to command; to adjudge; to address; to intend; to reckon; to esteem.

——In right ill array
She was with storm and heat, I you *behight* (inform). *Chaucer.*

False faitour, Scudamour, that hast by fight
And foule advantage this good knight dismay'd,
A knight much better than thyself *behight* (esteemed). *Spenser.*

The author's meaning should of right be heard,
He knoweth best to what end he enditeth;
Words sometimes bear more than the heart *behighteth*
(means). *Mirror for Magistrates.*

And him restoring unto living light,
So, brought unto his lord, where he did sit
Beholding all that womanish weake fight;
Whom soone as he beheld he knew, and thus *behight*
(addressed). *Spenser.*

There it was judged, by those worthy wights,
That Satyrane the first day best had donne;—
The second was to Triamond *behight* (adjudged). *Id.*

So taking courteous conge, he *behight* (commanded)
Those gates to be unbarr'd; and forth he went. *Id.*

But now aread, old father, why of late
Didst thou *behight* (name) me born of English blood,
Whom all a faeries son do nominate? *Id.*

That most glorious house that glis'treth bright,
Whereof the keys are to thy hands *behight* (entrusted)
By wise Fidelia. *Id.*

Sir Guyon, mindful of his vow yplight,
Uprose from drowsy couch, and him addrest
Unto the journey which he had *behight* (proposed or
premised). *Id.*

BEHE'W, *v.* be and hew. See Hew.

BEHIND, *prep.*
Behind, *adv.*
Behindhand.
} The imper. be, and the noun hind. Goth. *hinder;* Sax. *behindan, hindan,* after. Posterior in time or space, dilatory, too late. There is a distinction, however, to be observed between the meaning of after and *behind:* after respects order; *behind* respects position: one runs after a person, or stands *behind* his chair. After is used either figuratively or literally; *behind* is used only literally. See Crabbe.

Whan that thou wendest homeward by the mell,
Right at the entree of the dore *behind*,
Thou shalt a cake of half a bushel find,
That was ymaked of thin owen mele
Which that I halpe my fader for to stele.
Chaucer's Canterbury Tales.

After the overthrow of this first house of God, a second was erected; but with so great odds, that they wept, which beheld how much this latter came *behind* it. *Hooker.*

Therefore the prince, whom great affaires in mynd
Would not permit to make there longer stay,
Was forced there to leave them both *behynd*
In that good hermit's charge, whom he did pray
To tend them well, so forth he went his way.
Spenser.

All hurt *behind*, backs red, and faces pale
With flight and agued fear! Mend and charge home,
Or, by the fires of heaven, I'll leave the foe,
And make my wars on you. *Shakspeare.*

And these thy offices,
So rarely kind, are as interpreters
Of my *behindhand* slackness. *Id.*

——— his ponderous shield,
Ethereal temper, massy, large, and round,
Behind him cast. *Milton.*

Such is the swiftness of your mind,
That like the earth's, it leaves our sense *behind*.
Dryden.

What he gave me to publish, was but a small part of what he left *behind* him. *Pope.*

Consider, whether it is not better to be half a year *behindhand* with the fashionable part of the world, than to strain beyond his circumstances.
Spectator.

We cannot be sure that we have all the parti
before us; and that there is no evidence *behin*
yet unseen, that may cast the probability on th
side.

In the journey of life some are left *behind*, b
they are naturally feeble and slow; some b
they miss the way, and many because they l
by choice, and, instead of pressing onward
steady pace, delight themselves with moment
viations, turn aside to pluck every flower and
in every shade. *Johnson. R*

BEHIRAT el Merdj, or Khotaibe,
of Syria, about seven or eight leagues in ci
ference. It has no visible outlet, and the
not exhibiting any sensible increase by the
and the melting of snow which it receives
supposed to discharge them by some sub
neous channel. Distant twenty-one miles
Damascus.

BEHMEN (Jacob). See Boehmen.

BEHN (Aphra), an authoress, descende
a good family in Canterbury, was born in th
of Charles I. Her father's name was Jo
whothrough the interest of lord Willough
whom he was related, was appointed lieut
general of Surinam. Mr. Johnson died
voyage thither; but his family reaching
nam, settled there for some years. Here
formed an intimacy with the American
Oroonoko, and his beloved Imoinda, who
ventures she relates in her celebrated n
that name, and which Mr. Southerne afte
made the ground-work of one of the best
dies in the English language. On her ret
London, she became the wife of Mr. Behn,
chant, of Dutch extraction; but her wit, ab
and some less creditable qualifications,
brought her into estimation at the court of C
II. she was sent over to Antwerp, where, by
of her influence over Vander Albert, a
man of eminence, she, in 1666, sent he
telligence of the design formed by De R
to burn the English ships in their harbour
her return to England she was nearly lo
storm. From this period she devoted h
entirely to pleasure and the Muses; and
gained her the acquaintance of Dryden,
erne, and other men of genius. She pub
Miscellaneous Poems; Histories and N
translated Fontenelle's Plurality of World
annexed a criticism on it; her Plays mak
volumes. The character her plays should
tain in dramatic history, it is difficult to
mine, as their faults and perfections are
striking. In all, even the most indiffer
her pieces, there are strong marks of geni
understanding. Her plots are full of b
and ingenuity, and her dialogue every
sparkles with the dazzling lustre of genui
But then she has been accused of interl
her comedies with the most indecent scen
giving an indulgence in her wit to the m
delicate expressions. Pope, in his charac
women, alludes to Mrs. Behn under her p
name of Astrea:

The stage how loosely does Astrea tread,
Who fairly puts her characters to bed.

After a life intermingled with numerous

pointments, she died April 16, 1689, and lies interred in Westminster Abbey.

BEHO'LD,
Beho'lden,
Beho'lding,
Beho'lder,
Beho'ldingness,
Compounded of the intensive be and hold, it signifies to hold or fix the eye on an object; it is derived from the Saxon behealdan. It is sometimes employed as an interjection, in order to excite attention or admiration. *Beholden*, participle adjective. Dut. *Gehouden*. To be held, and as applied to the mind, to be held in obligation. *Beholdingness* expresses the state of being obliged. *Hold* in the sense of being under bond or obligation, is used by Gower, *Conf. Am.* book vii. and also in book viii. *Behold* is used by Wiclif, and some of the elder writers, in the sense of preference, to look on with favor.

Maistere we witen that thou art soth fast and thou techist in treuth the wey of God, and thou chargist not of ony man, for thou *beholdist* not the persones of men, therefore seye to us, what it seemeth to thee. *Wiclif. Matt.* chap. xxii.

They should consider howe deeply they wer bounden and *beholden* to hym, therefore, and with devout thankes inwardlye remember his inestimable boũty therin. *Sir Thomas More's Workes.*

His pleasure was, that for our saluacion we should to him be *beholdyng*, and not to the kepyng of the lawe. *Udall. Galathies.* cap. ii.

This olde Soudannesse
Ordeined hath the feste of which I tolde;
And to the feste, Cristen folk hem dresse.
In general ya, both yonge and olde
Ther may men fest and realtee *beholde*
And deintees, mo than I can you devise;
But all to dere they bought it or they rise.
Chaucer. Cant. Tales.

Dan Troilus, as he was wont to gide,
His yongè knightis, ledde hem up and downe
In thilke large temple on every side;
Beholding aie the ladeis of the toune,
Now here, now there; for no devocioune
Had he to none, to revin him his rest,
But gan to praise and lackin whom he lest.
Id. Troilus and Creseide.

All sodainely she saw transfigured
Her linnen stole to robe of scarlet red,
And moone-like mitre to a crowne of gold;
That even she herself much wondered
At such a chaunge, and ioyed to *behold*
Herself adorn'd with gems and iewells manifold.
Spenser.

With him went Hope in rancke, a handsome mayd,
Of cheareful looke, and lovely to *behold*;
In silken samite she was light array'd,
And her fayre locks were woven up in gold. *Id.*

The king invited us to his court, so as I must acknowledge a *beholdingness* unto him. *Sidney.*

In this, my debt, I seem'd loth to confess,
In that I shunn'd *beholdingness*. *Donne.*

When Thessalians on horseback were *beheld* afar off, while their horses watered, while their heads were depressed, they were conceived by the spectators to be one animal. *Brown's Vulgar Errours.*

I found you next, in respect of bond, both of near alliance, and particularly of communication in studies: wherein I must acknowledge myself *beholden* to you. *Bacon.*

Horns, which such as you are fain to be *beholden* to your wives for. *Shakspeare.*

Little are we *beholden* to your love,
And little look'd for at your helping hands. *Id.*

For Brutus' sake, I am *beholden* to you. *Id.*

But I will haste, and from each bough and brake
Each plant and juiciest gourd will pluck such cheer
To entertain our angel guest, as he
Beholding shall confess, that here on earth
God hath dispens'd his bounties as in heaven.
Milton.

When out of hope *behold* her! not far off,
Such as I saw her in my dream, adorn'd
With what all earth or heaven could bestow.
To make her amiable. *Id.*

The philosophy you have condescended to reveal to us is most extraordinary. We are *beholden* to you for your instruction. *Shaftesbury.*

Man looks aloft, and, with erected eyes,
Beholds his own hereditary skies. *Dryden.*
At this the former tale again he told,
With thund'ring tone, and dreadful to *behold.*
Id.

The Saviour comes, by ancient bards foretold!
Hear him, ye deaf; and all ye blind *behold!* *Pope.*

I think myself mighty *beholden* to you for the reprehension you then gave us. *Addison.*

We, who see men under the awe of justice, cannot conceive what savage creatures they would be without it; and how much *beholden* we are to that wise contrivance. *Atterbury.*

BEHO'OVE, or
Beho've, *v.* & *n.*
Behoof,
Behove'ful,
Behove'fully,
Behov'able,
Beho'vedly,
Behove'ly.
Sax. behoƿan, it is a duty. To be fit; to be meet: either with respect to duty, necessity, or convenience. It is used only impersonally with *it*.

Her majesty may alter any thing of those laws, for her own *behoof*, and for the good of the people. *Spenser.*

It is very *behooveful* in this country of Ireland, where there are waste deserts full of grass, that the same should be eaten down. *Id.*

Tell us of more weighty dislikes than these, and that may more *behoovefully* import the reformacion. *Id.*

Laws are many times full of imperfections; and that which is supposed *behooveful* unto men, proveth oftentimes most pernicious. *Hooker.*

For better examination of their quality, it *behooveth* the very foundation and root, the highest well-spring and fountain of them, to be discovered. *Id.*

Madam, we have cull'd such necessaries
As are *behooveful* for our state to-morrow.
Shakspeare.

No mean recompence it brings
To your *behoof*: if I that region lost,
All usurpation thence expell'd, reduce
To her original darkness, and your sway.
Milton.

Wert thou some star, which from the ruin'd roof
Of shak'd Olympus by mischance didst fall;
Which careful Jove, in nature's true *behoof*,
Took up, and in fit place did reinstall. *Id.*

Because it was for the *behoof* of the animal, that, upon any sudden accident, it might be awakened, there were no shuts or stopples made for the ears. *Ray.*

It may be most *behooveful* for princes, in matters of grace, to transact the same publicly; so it is as

> requisite in matters of judgment, punishment, and censure, that the same be transacted privately. *Clarendon.*

> It would be of no *behoof*, for the settling of government, unless there were a way taught, how to know the person to whom belonged this power and dominion. *Locke.*

> He did so prudently temper his passions, as that none of them made him wanting in the offices of life, which it *behooved* or became him to perform. *Atterbury.*

> But should you lure the monarch of the brook,
> *Behooves* you then to ply your finest art. *Thomson.*

BEHOWL, be and howl. See Howl.

BEJA, or Bexa, an appanage of the queens of Portugal, in the province of Alentejo, comprehending a city, three towns, and twenty-one parishes. The chief place is the city of Beja, which was raised to the rank of duchy by King John II., and has a population of 6000 inhabitants. It was anciently the Roman Pax Julia. It is the see of a bishop, who is suffragan of Compostella, and lies on the side of a hill, in a delightful tract of country, seventy-two miles S. S. E. of Lisbon. Long. 7° 50′ W., lat. 37° 55. N.

BEJADE, be and jade. See Jade.

BEJAGUR (Vijayaghar), a district in the province of Malwah, situated about the twenty-second degree of north latitude. It is possessed by different Mahratta chiefs. The chief towns are Awass, Sindwah, and Gherowd.

BEJAPE, be and jape; perhaps as jabber, and gibe, from Germ. *gabbaren;* Fr. *gaber;* Ital. *gabbare*. To joke, mock, deride, delude, jeer.

> Thou hast *bejaped* here dark Theseus
> And falsely changed hast thy name thus.
> *Chaucer.*

BEJAPOUR, a city of Hindostan. See Visiapour.

BEJAR, a town of Estremadura in Spain, in the district of Placentia, famous for its baths. It is seated in a very agreeable valley, surrounded with high mountains, whose tops are always covered with snow. Here the duke of Bejar had a handsome palace: it was raised to a dukedom in the house of Zuniga in 1448. In this neighbourhood are forests filled with game, and watered with fine springs; also a lake abounding with excellent fish. It is pretended that this lake is so much agitated before a storm as to be heard fifteen miles off.

BEJASI, or Beiasites, a liberal sect of Mahommedan Arabs.

BEIBENIÆ Stellæ, a name given by some astronomers to the principal fixed stars in each constellation; otherwise called corda, though some distinguish between corda and beibeniæ stella, restraining the former to stars only of the first magnitude, and extending the latter to several of the second or third. Hermes has a treatise express De Stellis Beibeniis, published by Junctinus, in his Speculum Astrologicum, and also in his commentaries upon Jo. de Sacrobosco's book De Sphera.

BEICHLINGEN, a county of Saxony, in Thuringia, on the Lossa, and belonging, since 1815, to the king of Prussia. The castle of Beichlingen is situate not far from Kolleda,
eighteen miles north of Weimar, and tw
north-east of Erfurt.

BEIDELSAR, in botany, a name by w
some authors call the apocynum Syriacum
Syrian dog's-bane, a poisonous plant.

BEJETZK, or Beshezh, a town of Ru
in the government of Twer, the capital of a c
of the same name. Here are 3100 inhabitants;
an annual fair is held here, which lasts five
The principal articles for sale are grain,
silk, and cotton stuffs. It is forty-eight
N. N. E. of Twer, 260 south-east of St. Pe
burg.

BEJIGHUR, a town in the Mahratta te
ries, in the province of Agra, Hindostan,
seventy miles south-west from Agra. It s
at the extremity of a low hill, and has an u
and lower fort. The surrounding country
sists of ranges of low hills much covered
jungle, and separated from each other by
mediate plains, intersected by deep ravines
upon the whole, well supplied with water.

BEILD, beeld, shelter. Old Sax. be-hl
to cover, to protect, to shelter.

BEILSTEIN, in mineralogy, axe-sto
green stone, remarkable for its toughness
used by the South Sea islanders, the New
landers, for making hatchets, &c. Ima
idols and personal ornaments have also
made from it; numbers of which have
brought to this country, and may be seen in
public and private cabinets.

BEIN, Beinn, or Bhein, in the Gaeli
guage, signifies a mountain, and accor
makes part of the names of a considerable
ber of hills and mountains in Scotland; pa
larly,

Bein-an-Ini, in Argyllshire, which has a
of coals in it, that has been twice attemp
be wrought, but from various causes given

Bein-an-Lochan, i. e. the hill of the la
Argyllshire, so named from a lake which w
its base.

Bein-Ardlanich, in Ranoch, in the par
Fortingal, Perthshire, about 3500 feet abo
level of the sea, &c.

BEINASCHI (Giovanni Battista), hist
painter, was a Piedmontese, and born in
He studied at Rome, under Pietro del Po
some say afterwards under Lanfranc. It
tain he was particularly fond of Lan
works, and became so thoroughly acqu
with his style and manner, that many of hi
tures are, at this day, accounted the
of Lanfranc. He was an admirable de
his invention was lively, and he was not
expeditious but correct. His merits pr
him the honor of knighthood, whence
styled cavalier.

BEINHEIM, a fort of France, in the d
ment of the Lower Rhine, and ci-devan
vince of Alsace; seated on the Sur, n
confluence with the Rhine.

BEIRA, a province of Portugal, boun
the west by the Atlantic ocean, on the s
the Portuguese Estremadura; on the sou
by the Spanish Estremadura; on the east
province of Tralos Montes, and Entre-D
Minho; and on the north by the river

t extends in length about thirty-four leagues, and in breadth about thirty leagues, and is divided into six commarcas. The chief episcopal city is Coimbra, which is likewise an university; and Viseu, also a bishopric, and formerly the capital of a dukedom. It contains, altogether, seven episcopal cities, 230 towns, and 900,000 inhabitants. The country is equally agreeable and fruitful, producing corn, wines, &c. in abundance, and the hills affording excellent pasture to cattle and sheep. Of late, however, the grain has been said not to be sufficient for home consumption; and that the chestnut-trees, which cover many of the mountains, supply the place of it to many of the lower orders of the people. Olive plantations are numerous, and their produce, with that of the vineyards, forms the chief exports. Mines, both of silver and lead, were formerly wrought in the mountainous districts, and rich specimens of ore have been found near Lamego; but since Portugal obtained her American possessions, the inhabitants have been prohibited from extracting the precious metals.

BEIRAM, or Bairam. See Bairam.

BEISCH (Joachim Francis), a painter of landscapes and battles, born at Ravensburgh in Suabia in 1665. He was taught the rudiments of the art by his father; and first employed at the court of Munich in painting the battles of the emperor Maximilian Emanuel in Hungary. While that prince was absent on some of his expeditions, Beisch took the opportunity of visiting Italy, and it is a sufficient testimony of the perfection to which he arrived to say, that even Solimene copied several of his landscapes. The scenes of his landscapes are agreeably chosen, and picturesque: his touch is light, tender, and full of spirit; and his style of composition resembles that of Gasper Poussin, or Salvator Rosa. He etched several pleasing views in a good taste, but these prints are scarce. He died in 1748.

BEISSKER, in ichthyology, a name given by Gesner and others to the fish commonly called mustela fossilis. It is a species of the cobitis, distinguished by Artedi by the name of the bluish cobitis, with fine longitudinal lines on each side. Schonefeldt calls this the pœcilia, and Johnson the piscis fossilis.

BEISTON, a township in the parish of Bunbury and county of Chester, distinguished for the ruins of a fortress built in the year 1220, by Randle Blundeville, earl of Chester. It enclosed an area of about five or six acres, and was guarded on the accessible side by a vast moat cut in the solid rock. The other side rose on a mass of insulated rocks, almost perpendicularly, to the height of 366 feet. In the time of Henry VIII. this stately pile was almost dilapidated: yet in the civil wars of Charles I.'s reign, we find it in a state of defence, which rendered it a most important post. It was garrisoned for the parliament, when a Captain Sandford, a celebrated cavalier, undertook to scale its perpendicular side; and having thus gained entrance with eight men, he intimidated the commander, Captain Steel, and compelled him to surrender. Steel was soon afterwards shot for cowardice. The royalists were then besieged for upwards of four months. Prince Rupert relieved them; but the castle was a second time invested, and a blockade of eighteen weeks reduced the garrison to the most piteous extremity of famine. Nevertheless, after a gallant defence, they obtained honorable terms, and the castle was immediately dismantled by order of the parliament.

BEIT-EL-FAKIH (the Doctor's-house), a town and district of Arabia, in lat. 14° 31′ N., long 43° 2′ E. It was founded by a Mussulman saint, named Ahmid ibn Musa, in the seventeenth century, and is the great emporium of the coffee trade, the best samples of that article being produced in the neighbouring mountains. The quantity carried to Mocha, twenty-five leagues distant, is about 4000 bales of 313 pounds each, of which thirteen pounds are allowed for package, unless the English or French happen to be there, when it is greater. A bale generally costs forty-two Spanish piastres, which, with all duties and expenses, makes the coffee amount to 14½*d.* per pound. Several European powers have had residents at Beit-el-Fakih, and merchants resort thither from many parts of the east. It is subject to the imám of Yemen, and has risen considerably since the ruin of Ghalefkah, a town on the Red Sea, formerly the port of this part of Arabia.

BEIZA, or BEIZATH, in Hebrew antiquity, 1, a word signifying an egg; 2, a certain measure among the Jews; 3, a gold coin, weighing forty drachms, among the Persians, who gave out that Philip of Macedon owed their king Darius 1000 beizaths, or golden eggs, for tribute money, but Alexander the Great refused to pay them, saying, that the bird which laid these eggs was flown to another world.

BEKES, or Bekesch, a populous and thriving market town of Hungary, in the above county. It is situated on the river Black Karosch, and was formerly a place of strength. It is inhabited by aboriginal Hungarians, who profess the reformed faith, and have a parish church.

BEKESCH, a county of Hungary, bounded on the north by great Cumania and Bihar, on the east by Zarand, on the south by Arad, and on the west by Zolnok and Czongrad. It forms a square of nearly forty miles, and contains four towns, sixteen villages, and about 55,000 inhabitants, who are composed of Hungarians, Bohemians, Sclavonians, and Walachians, professing the Greek, the Lutheran, and the Catholic religions.

BEKIA, Becouya, or Bequia, a small island among the Grenadilloes, in about lat. 13° N., belonging to Britain, and chiefly valuable for turtle. It produces also wild cotton and watermelons. It lies sixty miles north-east of Grenada. The French have called it Little.

BEKISS, be and kiss. See Kiss.

BEKKER (Balthazar), a famous Dutch divine, born in 1634 at Warthuisen, in the province of Groningen. In 1679 he was chosen minister at Amsterdam, where he published The World Bewitched, an ingenious piece against the vulgar notion of spirits. It raised such a clamor against him, that he was deposed from the ministry, but the magistrates of Amsterdam continued his pension. His opinions were, that the essence of spirits consists in thinking; that therefore spirits cannot act on bodies or other spirits: and that those texts, which speak of their actions are metaphorical. The possessions in the gospels he ascribes to mental disorders. He died in 1698.

BEKNOWE, be and know. See KNOW.

BEL, בעל, i. e. the Lord, Heb. Chald. or Belus, the supreme god of the ancient Chaldeans, or Babylonians. He was considered as the founder of the Babylonian empire; and supposed to be the Nimrod of Scripture; the same with the Phœnician Baal. See BAAL and BABYLON.

BEL, in botany, the name of a plant called by some the cucumis capparis, or caper cucumber. This plant is very imperfectly described to us; and we find among the Arabian writers, that the fruit was called by that name, as well as the whole plant. Avicenna, who gives the fullest account of it, says that it was an Indian plant, resembling in growth the common cucumber, but bearing a fruit like the caper: he tells us that this fruit was the only part of the plant used in medicine, and that it was very hot and bitter, being somewhat like ginger in the fiery taste.

BEL (Matthias), an eminent Hungarian divine, born at Orsova in 1684. He at first studied physic at Halle, but gave it up for theology, and became rector of the school at Presburg, and minister to a Lutheran congregation there. He wrote, among other works, a History of Hungary, which was so much admired, that the emperor Charles VI. appointed him his historiographer, and ennobled him; and notwithstanding his being a Lutheran, the pope in 1736 sent him his picture, and many large gold medals. He was a member of the Royal Society of London, and of the academies at Berlin and Petersburg. He died in 1749, aged sixty-five.

BEL (Charles-Andrew, son of Matthias), was born at Presburg in 1717. In 1741 he was appointed professor extraordinary at Leipsic, and in 1756 professor of poetry, and librarian to the university, with the title of counsellor of state. He wrote De Vera Origine et Epocha Hunnorum, &c. 4to.; besides which he conducted the Acta Eruditorum from 1754 to 1781. He died in 1782.

BEL AND THE DRAGON, THE HISTORY OF, an apocryphal and uncanonical book. It was always rejected by the Jewish church, and is extant neither in the Hebrew nor the Chaldee language, nor is there any proof that it ever was so. St. Jerome gives it the title of the Fable of Bel and the Dragon.

BELA, a large town of Hungary, in the county of Zips. It was one of the sixteen towns which were mortgaged to Poland in 1412, and is inhabited by German Lutherans, who gain a livelihood by the tillage of the ground, and a trade in wine, iron, and tobacco.

BELABOUR, be and labor. See LABOR.

BELAC, or BELLAC, a city of France, in the department of the Upper Vienne, and ci-devant province of Lyonnois; seated on the Vinçon, twenty miles north of Limoges, and 160 south of Paris. It contains 3291 inhabitants.

BELACED, be and laced. See LACE.

BE'LAMIE, } Fr. *bel amie*, *bel amou*
BE'LAMOUR. } friend, a paramour, a g
a consort.

> Wise Socrates
> Pour'd out his life, and last philosophy,
> To the fair Critias, his dearest *belamie*.
> *Faerie Q*

> Lo, lo, how brave she decks her bounteous bo
> With silken curtains and gold coverlets,
> Therein to shroud her sumptuous *belamour*.

BEL'ATE, } be and late. See La
BEL'ATEDNESS. }

> Fairy elves,
> Whose midnight revels, by a forest side,
> Or fountain, some *belated* peasant sees,
> Or dreams he sees. *Milton's Paradis*

> Or near Fleetditch's oozy brinks,
> *Belated*, seems on watch to lie.

BELATUCADRUS, the name of an an British idol, recorded in old inscriptions; supposed by Selden and Vossius to be the with Belenus.

BE'LAY, } Be and lay. To waylay,
BE'LAYED. } in wait, to place in ambus
overlay, to cover.

> 'Gainst such strong castles needeth greater m
> Than those small forces ye were wont *belay*.
> *Sp*

> All in a woodman's jacket he was clad,
> Of Lincolne greene, *belayd* with silver lace.

> The speedy horse all passages *belay*,
> And spur their smoking steeds to cross their
> *D*

To BELAY, on board a ship, signifies the as fasten. Thus they say, belay the shee tack, that is, fasten it to the kevel, by wind several times round a last, &c.

To BELAY A ROPE, a sea term; to splic mend a rope, by laying one end over anoth

BELBEIS, a town of Egypt, near the S frontier, four miles north-west of Suez. I formerly well fortified, and the only bulwa the kingdom on this side. Buonaparte, in availed himself of it, and strengthened the fications against the Turks. Its population i scarcely a third of what it formerly was does not exceed 5000. It has been suppo be the ancient Bubastum, but D'Anville thinks that it was Pharbothus. A junction takes place of the canals derived from dif parts of the Nile.

BELCH', *v.* & *n.* } Sax. bealcan. To
BELCH'ING. } wind from the stoma
eruct. To issue out, as by eructation. To out from the stomach; to eject from any h place. It is a word implying coarseness, fulness, or horror.

> The bitterness of it I now *belch* from my hea
> *Shak*

> They are all but stomachs, and we all but f
> They eat us hungerly, and, when they're full,
> They *belch* us.

> This thing, nor man, nor beast, turns all his
> In drink; his days, his years, in liquor drench
> So quaffs he sickness down, by quaffing health
> Firing his cheeks with quenching; strangely
> ing

His eyes with firing; dull and faint they roll'd;
But, nimble lips, known things and hid unfold;
Belchings, oft sips, large spits point out the tale he
told. *Fletcher's Purple Island.*

Immediate in a flame,
But soon obscur'd with smoke, all heav'n appear'd,
From those deep-throated engines *belch'd*, whose roar
Imbowell'd with outrageous noise the air,
And all her entrails tore, disgorging foul
Their devilish glut, chain'd thunderbolts, and hail
Of iron globes. *Milton.*

The waters boil, and *belching* from below,
Black sands as from a forceful engine throw.
Dryden.

A triple pile of plumes his crest adorn'd,
On which with *belching* flames Chimæra burn'd.
Id.

The symptoms are, a sour smell in their fæces, *belchings*, and distensions of the bowels. *Arbuthnot on Aliment.*

BE'LEAGUE, Be'leaguer, Be'leaguerer. Be and league. Germ. *lagen*, Dut. *laeghen*, *be-laeghen*, Swed. *beleagra*, Ang.-Sax. licjan, to lay, to place before, to attach, to besiege; to lie before a town, in order to force it to capitulate.

Their business, which they carry on, is the general concernment of the Trojan camp, then *beleaguered* by Turnus and the Latins. *Dryden's Dufresnoy.*

Against *beleaguer'd* heav'n the giants move;
Hills pil'd on hills, on mountains mountains lie,
To make their mad approaches to the sky. *Dryden.*

BE'LEE, *v. a.* A term used in navigation. To place in a direction unsuitable to the wind.

But he (sir) had th' election;
And I (of whom his eyes had seen the proof
At Rhodes, at Cyprus, and on other grounds
Christian and heathen) must be *be-leed*, and calm'd,
By debitor and creditor. *Shakspeare. Othello.*

BELEM, a town and fortress of Portugal, in Estremadura, about a mile from Lisbon, on the north side of the Tagus, and designed to defend the entrance of the river. Here all ships that sail up to Lisbon must bring to. The fortress is on an island in the middle of the Tagus, and on the opposite side is the station for quarantine. After the earthquake of 1755 the royal family of Portugal removed their residence to this town, where they occupied a wooden house. On 3d September, 1758, king Joseph narrowly escaped assassination in this neighbourhood. The town was founded by king Emanuel, and contains, besides the royal palace, an hospital for decayed noblemen, and a rich monastery of Hieronymites, the church of which encloses the tombs of many kings and princes of the royal family.

BELEMNITE, in mineral conchology, a species of fossil organic remains, occurring in chalk formations, but very sparingly in the upper beds of that substance. It is, however, abundant in the beds immediately below the chalk: its form is cylindrical, pointed at one end, and having a conical hollow at the other. The animal is considered to have belonged to the testaceous molluscæ, and to have been contained in a multilocular univalve shell; but the fossil does not present itself in a sufficiently perfect state to furnish an accurate knowledge of its form. Its substance is fibrous carbonate of lime, radiating perpendicularly from the axis of the cylindrical body. In the districts in which they are found they have been vulgarly called thunderbolts.

BELEM'NITES, *n. s.* From βελος, a dart or arrow, because of its resemblance to the point of an arrow. Arrowhead, or finger-stone, of a whitish, and sometimes a gold color. See Belemnite.

BELEMNOIDES, or Belennoides, in anatomy; from βελος a dart, and ειδος form; the shooting forth of the bone called aliformis, which is the sixth in the basis of the scull.

BELENNUS, in ichthyology, the name of a small anguiliform fish, called by some blennis. It is a sea fish, and very scarce. It approaches much in figure to the English bull-head, or miller's thumb, the cottus of authors.

BELENUS, in mythology, a name which the Gauls gave to the sun, which they also called Mithra; and, as some suppose, the same with the Baal of Scripture, and the Belus of the Assyrians.

BELERIUM, in ancient geography, a promontory of the Dumnonii or Damnonii, the westmost Britons. It is now called the Land's End, in Cornwall.

BELESIS, or Nanybrus, said by some ancient historians to have been the founder of the Babylonish empire, and, in conjunction with Arbaces the Mede, to have put an end to the kingdom of the Assyrians, by the defeat and death of Sardanapalus. Belesis is represented both as a hero and a crafty knave. It is said he was base enough to endeavour to obtain from his colleagues, by treachery, the immense treasures which had been concealed in the conflagration at Nineveh. When the secret was discovered, he was called to an account, and tried by the other chiefs who had been assistant in the war, and who, upon his confession, condemned him to lose his head. But Arbaces freely forgave him, left him in possession of the treasure, and also the independent government of Babylon, saying, The good he had done ought to serve as a veil to his crime. Under the successor of Arbaces he became a man of show and effeminacy, of whom we hear nothing more that is worthy of notice.

BELESME, or Bellesme, a town of France, in the department of the Orne, and ci-devant province of Perche; seventy-five miles south-west of Paris.

BELESTAT, a town of France, in the department of the Arriege, remarkable for a spring which regularly flows and ebbs.

BELEZ, or Belz, a town of Austrian Galicia, circle of Zokien, not far from the river Bug, with a castle. It once belonged to Poland, and was the capital of a circle in Red Russia; but was annexed to Austria, at the first partition of Poland, in 1772. The town is large, but neither rich nor commercial. It lies in the middle of a plain, at the extremity of which is a morass; the houses are of wood, and the only buildings of note are the churches of the Catholic and Greek communions. The extensive oak forests in the neigbourhood yield abundance of potash. 148 miles east of Cracow, and 152 S. S. E. of Warsaw. Long. 24° 12′ E., lat. 50° 24′ N.

BELFAST, a sea-port town in the county of Antrim, Ireland, situated at the mouth of the

Lagan river, here crossed by a stone bridge of twenty-one arches, and at the extremity of Belfast Lough, or Carrickfergus Bay. The appearance of the place is cheerful and animated. The streets are broad, well paved, cleaned, and lighted, and the public buildings and institutions numerous. Amongst them are the Collegiate Institution, the Belfast Academy, Linen Hall, commercial buildings, two churches, Roman Catholic chapels, meeting-houses of different dissenters, lunatic asylum, infirmary, &c., all on a scale suited to the liberality of this very spirited place. A museum and botanic garden has lately been added to the list of scientific institutions, and the healthy condition of two daily journals sufficiently testify the reading character of the inhabitants. The port of Belfast ranks next after Cork in amount of imports and exports. In 1832 the number of vessels belonging to this port was 219, their tonnage amounting to 23,681. Of these 60 were engaged in foreign, and 159 in the coasting trade. The total number of vessels entered at the same period exceeded 2500, carrying upwards of 250,000 tons. The imports are various; the exports consist of glass, vitriol, pottery, refined sugar, porter, whiskey, besides the staple manufactures, cotton and linen. To these are to be added a very extensive trade in butter, oatmeal, pork, and provisions generally, for the Liverpool market, shipped from this quay. The gross amount of customs may be estimated annually at £200,700. An inland trade is facilitated by means of the Lagan navigation, which, opening into Lough Neagh, affords a communication with four counties. The town is governed by a sovereign, twelve burgesses, and a commonalty, under a charter of James I.; and, by the provisions of the reform bill, returns two members to parliament. This is a permanent military station. Distance north from Dublin 102 miles. Population about 50,000.

Belfast, a post town of the United States of America, in the district of Maine; situated on the west side of the Penobscot; 246 miles from Boston, and 591 from Philadelphia.—A town of Pennsylvania, in the county of Bedford.—A township of the United States, in Hancock county, district of Maine, on the mouth of the Penobscot.

Belfast Bay, a bay on the coast of the district of Maine, which runs into the land by three arms.

BELFLOWER, *n. s.* From bell and flower, because of the shape of its flower; in Latin *campana*. A plant. There is a vast number of the species of this plant. 1. The tallest pyramidal belflower. 2. The blue peach-leaved belflower. 3. The white peach-leaved belflower. 4. Garden belflower, with oblong leaves and flowers; commonly called Canterbury bells. 5. Canary belflower, with orrach leaves and a tuberose root. 6. Blue belflower, with edible roots, commonly called rampions. 7. Venus looking-glass belflower, &c.—*Miller*.

BELFORD, a market town in Northumberland, north of Wooller, seated on the ridge of a hill on the Berwick road, twelve miles from Alnwick, and 319 from London.

BEL'FOUNDER, *n. s.* From bell and found. He whose trade it is to found or
bells.

> Those that make recorders know this, and lik
> *belfounders* in fitting the tune of their bells.

BELFRY, Belfredus, is used by mi
writers of the middle age, for a sort of
erected by besiegers, to overlook and com
the place besieged. Belfry originally deno
high tower, where sentinels were placed to
the avenues of a place, and prevent surprise
parties of the enemy, or to give notice of fir
ringing a bell. In the cities of Flanders,
there is no belfry on purpose, the tower
chief church serves the same end. The
belfry is compounded of the Teutonic *bell*
freid peace, because the bells were rung fo
serving the peace. Belfry is now used fo
part of a steeple wherein the bells are hung.
is sometimes called by middle age writers ca
nile, clocaria, and tristegum. It is likewise
for the timber work which sustains the bell
steeple, or that wooden structure to whic
bells in church steeples are fastened.

BELGÆ, the ancient inhabitants of
Belgica, stiled by Cæsar the bravest of the
being untainted by luxury. See Belgium.
first migration of the Belgæ into Britain
place at a very early period; some of the
colonies were established here but a short time
to the Roman invasion. At that time their
body inhabited the present Hampshire, Wil
and Somersetshire. Those on the south
according to Cæsar, Com. l. v. c. 10, had
over from different parts, and still retaine
names of the states from which they desce
The last by Divitiacus, the king of the Sues
one of the most powerful Belgic nations of
and, having obtained a firm settlement
British coast, he continued to exercise h
thority on both sides of the channel. Th
mans found in these tribes the most po
opponents to their arms; and the honor of
final subjugation was reserved for Vesp
who fought thirty-two battles, and took
than twenty towns, before he could reg
conquest of them as complete. After th
Romans greatly improved the country
Belgæ by their celebrated military way
erection and rebuilding of towns, &c.;
the most celebrated of which were Ven
garum, the present Winchester, and Aqu
the modern Bath. See Bath and Winch

BEL'GARD, *n. s.* Fr. *belle egard.*
glance; a kind of regard; an old wor
wholly disused.

> Upon her eyelids many graces sat,
> Under the shadow of her even brows,
> Working *belgards*, and amorous retreats.
> *Faerie*

BELGICA, a town of the Ubii in Gall
gica, midway between the Rhine and the
now called Balchusen, a citadel of Julier

Belgica Gallia, or Belgic Gaul,
Cæsar's three divisions of Gaul, contai
tween the ocean to the north, the Seine
Marne to the west, the Rhine to the east,
the south at different times within differen
Augustus, instituting everywhere a new
of provinces, added the Sequani and

who till then made a part of Celtic Gaul, to the Belgic.

BELGINUM, a town of the Treviri, in Gallia Belgica: now called Baldenau, in the electorate of Triers.

BELGIUM, a kingdom of Europe, formerly called the Austrian Netherlands, bounded on the N. by Holland; on the E. by Germany; on the S. W. by France, and on the N. W. by the German ocean. It extends from 49° 25′ to 51° 30′ N. lat. and from 2° 40′ to 6° 30′ E. lon., comprises 14,459 square miles, and sustains a population of 4,082,427 souls, including the province of Luxemburg. Its chief rivers are the Scheldt, which is both broad and deep, and the Maese, which flows from France to Holland. Forests constitute a characteristic feature of this country; those of Namur, Liege, Luxemburg, and Soignees are very extensive, and the remains of the famous forest of Ardennes have hitherto escaped the axe. Brussels, on the river Senne, is the capital, but Antwerp, Ghent, Bruges, Ostend, Liege, Namur, Maestricht, Louvain, and Luxemburg, are all remarkable places, either for their commercial relations, military strength and position, or literary or other celebrity. Genappe and Waterloo, otherwise unimportant, will be remembered by the desperate and decisive battles fought in their vicinities. The history of Belgium will be found connected with that of Holland, until the revolt of the latter from the crown of Spain. Belgium continued under Spanish control even after the independence of Holland. Early in the eighteenth century, it passed into the possession of the Austrians, and so remained until the breaking out of the French revolution, when it was wrested from the Austrians and annexed to France in the year 1795. Upon the overthrow of Napoleon, the congress of Vienna attached Belgium to Holland, constituting thereby a kingdom, to be denominated "the Netherlands." This union appears to have been solemnized without the existence of any previous affection between the contracting parties, and accordingly, upon the successful termination of the revolution of Paris in 1830, the Belgians rose *en masse* and threw off, in the most entire manner, the yoke of Holland. Their independence was declared on the fourth of October, 1830, after several sanguinary conflicts with their former masters at Antwerp, Brussels, and other places. On the fourth of June, 1831, the Belgian congress elected Prince Leopold of Saxe Cobourg as their king, who was solemnly crowned at Brussels, on the twenty-first of July following. After the accession of Leopold, the Dutch continued to manifest a disinclination to a peaceful separation, and even retained possession of the citadel of Antwerp; remonstrances from the courts of Great Britain, France, Russia, Austria, and Prussia, for its restitution, proving fruitless, a French army set down before the fortress, which was defended with undaunted bravery by general Chassè, and, after a deplorable sacrifice of lives, succeeded in obtaining its surrender. See NETHERLANDS and HOLLAND.

BELGRADE, the ancient Alba Græcorum, a city of European Turkey, the capital of Servia, seated on a hill a little above the confluence of the Save and the Danube. Belgrade was formerly large, strong, and populous, surrounded with a double wall, flanked with towers, and defended by a castle, built with square stones. The suburbs are still very extensive, and the appearance of the place imposing. The dilapidated walls of the fortress enclose the principal mosque, and the residence of the pacha, or governor, of Servia. Belgrade has always been an important bulwark on the north-west of Turkey; a strong garrison is maintained here, and most of the inhabitants consist of the families of the Janissaries, who defend it. The whole population is estimated at twenty or twenty-five thousand; and when the town was taken by the Austrians, in 1789, about 7000 of them were soldiers. It is, indeed, rather a military depôt than a trading city.

In the fifteenth century it was unsuccessfully attacked by Amurath II.; but was taken by Solyman, the Ottoman emperor, in 1522. Being retaken by the Imperial army, under the elector of Bavaria, in 1688, it reverted again to the Turks in 1690, with whom it remained till August 1717, when it surrendered to prince Eugene; and will always be famous in military history by the battle fought at this time in its vicinity, and which was the last grand victory obtained by that prince. It then remained in possession of the Austrians for twenty-two years, during which they were engaged in repairing and strengthening its defensive works. In 1739, however, it was given up to the Turks, on condition that these should be demolished; but so important did the possession of it always appear to the Austrians, that they again invested it in 1789, under the command of Field-marshal Laudohn. The suburbs were all carried sword in hand, and the garrison surrendered upon honorable terms. About 300 pieces of artillery and vast military stores, were said to be found in the fortress on this capture. It was again restored to the Turks, however, by the peace of Sistova, in 1791, under whom it has since remained. Long. 20° 10′ E., lat. 44° 43′ N.

BELGRADE, a small town of Romania, on the strait of Constantinople.

BELGRADE, a township of the United States, in Lincoln county, district of Maine, between the Kennebeck and the Androscoggin.

BELGRADO, a town, late of Friuli, in the Venetian territories in Italy. It stands near the river Tagliamento.

BELGRAM, a town in the Nabob of Oude's territories, twelve miles north-east from Kanoge in lat. 27° 13′ N., long. 80° 3′ E. It is of considerable antiquity, and is still distinguished by a ruinous fort and moat. The buildings appear to have been in the best style of Mogul architecture.

BELIAL, בליעל, Heb. i. e. wicked, worthless, or unprofitable; a name given in Scripture to the devil. Thus the inhabitants of Gibeah, who abused the Levite's wife, Judges xix. 22, are styled sons of Belial. Hophni and Phineas, the high priest Eli's eldest sons, are likewise called sons of Belial, 1 Sam. ii. 12, upon account of their crimes. And that the name Belial denotes the devil, is evident, from what St. Paul says, 2 Cor. vi. 15.

BELIDES, in mythology, the fifty daughters of Danaus. See DANAIDES.

BELIDOR (Bernard Forest de), a Catalonian engineer in the service of France, member of the Academies of Sciences at Paris and Berlin, and of the Royal Society of London; he was a celebrated mathematician, and author of a number of military tracts, in which the science of mathematics is applied to military uses. He died 1765, aged seventy.

BE'LIE, *v. a.* From be and lie. To counterfeit; to feign; to mimic. To calumniate; to raise false reports of any man. To give the lie to; to charge with falsehood. To give a false representation of any thing. To fill with lies.

BELI'EVE, *v.*
Beli'eve, *n.*
Beli'ef,
Belie'ful,
Belie'fulness,
Beli'evable,
Belie'ver,
Believ'ing,
Believ'ingly,

The old Sax. *lyfan*, *belyfan*, is the English to *live*, to *belive*. In Pier's Plouhman to bring forth your *belyve* is to bring forth that by which you live. It was early applied to Christianity, and to religion, as the revelation of life; and as crediting the divine testimony was the means of life immortal, that credit was called life and belife—hence to *believe*. It is now of much more comprehensive import. *Belief* is credit given to something which we know not of ourselves, on account of the authority by which it is delivered. It is likewise the theological notice of faith; the creed and body of tenets held by the professors of faith; to *believe* is the act or habit of the mind; in reference to all these a *believer* is one that gives credit to a testimony; a professor of Christianity.

Sire, it is Cristes might,
That helpeth folk out of the fendes snare,
And so ferforth, she gan our lay declare,
That she the constable, or that it were eve,
Converted, and on Crist made him *beleve*.
Chaucer.

And though that I, unworthy son of Eve,
Be sinful, yet accepteth my *beleve*. *Id.*

As he that readeth Cæsar's Commentaries, *believing* the same to be true, hath hereby a knowledge of Cæsar's life and notable acts, because he *believeth* the history of Cæsar; yet it is not properly said, that he *believeth* in Cæsar, of whom he looketh for no help nor benefit, even so, he that *believeth* that all that is spoken of God in the Bible is true, and yet liveth so ungodlily, that he cannot look to enjoy the promises and benefits of God; although it may be said that such a man hath a faith and *belief* to the words of God, yet it is not properly said that he *believeth* in God, or hath such a faith and trust in God, whereby he may surely look for grace, mercy, and everlasting life at God's hand. *Homily on Faith.*

Infidels themselves did discern, in matters of life, when *believers* did well, when otherwise. *Hooker.*

If he which writeth do that which is forcible, how should he which readeth be thought to do that, which, in itself, is of no force to work belief, and to save *believers*? *Id.*

Discipline began to enter into conflict with churches, which, in extremity, had been *believers* of it. *Id.*

And sundry battels, which she had atchieved
With great successe, that her hath glorifide,
And made her famous, more than is *believed*;
Ne would I it have ween'd had I not late it prieved.
Spenser.

Superstitious prophecies are not only the *beli* fools, but the talk sometimes of wise men. *B*

Now God be prais'd, that to *believing* souls
Gives light in darkness, comfort in despair.
Shak

Horatio says, 'tis but our fantasy;
And will not let *belief* take hold of him
Touching this dreaded sight, twice seen of us

When suddenly stood at my head a dream,
Whose inward apparition gently moved
My fancy to *believe* I yet had being
And liv'd.

The action is baptizing or immersing in w the object thereof, those persons of any nation, his ministers can by their instruction and pers render disciples; that is, such as do sincerely the truth of his doctrine, and seriously resol obey his commandments. *Be*

Adherence to a proposition which they ar suaded, but do not know, to be true, is not s but *believing*.

Though they are, I *believe*, as high as most s in England, yet a person, in his drink, fell without any other hurt than the breaking of an *Addison on*

I could not be so duped, even by the arch- himself, as to be made to question the divine of those comforts; but I have been made to (which you will say, is being duped still more God gave them to me in derision, and took away in vengeance. *Cowper's Correspondence.*

Belief, in its general and natural sens notes, 1. A strong assent of the mind t truth of any proposition. In this sense, has no relation to any particular kind of or arguments, but may be produced by means whatever. Thus, we are said to be our senses, to believe our reason, to beli witness, &c. And hence, in rhetoric, all of proofs, from whatever topics deduced, called πιϛις, because apt to produce beli persuasion touching the matter in hand. 2 lief, in its more restrained and technical invented by the schoolmen, denotes that ki assent which is grounded only on the author testimony of some person or persons, ass or attesting the truth of any matter prop In this sense, belief stands opposed to k ledge and science. We do not say we be that snow is white, or that the whole is eq its parts; but we see and know them to b That the three angles of a triangle are equ two right angles, or that all motion is nat rectilinear, are not said to be things cre but scientifical; and the comprehension of truths is not belief but science. 3. But a thing propounded to us is neither appar our senses, nor evident to our understan neither certainly to be collected from any and necessary connexion with the cause which it proceeds, nor with the effects wh naturally produces; nor is taken up upon real arguments, or relation thereof to oth knowledged truths; and yet, notwithstan appears as true, not by manifestation, b an attestation of the truth, and moves us sent, not of itself, but in virtue of a testi given to it—this is said to be properly cre and an assent to this is the proper notion lief or faith.

Believers, in church history, an appellation given, towards the close of the first century, to those Christians who had been admitted into the church by baptism, and instructed in all the mysteries of religion. They had also access to all parts of divine worship, and were authorised to vote in the ecclesiastical assemblies. They were thus called in contradistinction to the catechumens who had not been baptised, and were debarred from these privileges.

BELI'KE, } Be and like. See Like.
Beli'kely, } Belike in our older writers, and in vulgar speech, at the present day, is used for it is likely, probably, perhaps. It is sometimes used in a sense of irony, as it may be supposed.

> There came out of the same woods a horrible foul bear, which fearing, *belike*, while the lion was present, came furiously towards the place where I was. *Sidney.*

> Lord Angelo, *belike*, thinking me remiss in my office, awakens me with this unwonted putting on. *Shakspeare.*

> Josephus affirmeth, that one of them remained in his time; meaning, *belike*, some ruin or foundation thereof. *Raleigh.*

> We think, *belike*, that he will accept what the meanest of them would disdain. *Hooker.*

> God appointed the sea to one of them, and the land to the other, because they were so great, that the sea could not hold them both; or else, *belike*, if the sea had been large enough, we might have gone a fishing for elephants. *Brerew. on Lang.*

BELINGELA, in botany, a name given by some authors to the malum insanum, or mad apple.

BELIO, in ancient geography, a river of Lusitania, called otherwise Limæas, Limeas, Limius, and Lethe, or the River of Oblivion: the boundary of the expedition of Decimus Brutus. The soldiers refusing, out of superstition, to cross, he snatched an ensign out of the hands of the bearer, and passed over, by which his army was encouraged to follow. He was the first Roman who ever proceeded so far, and ventured to pass. The reason of the appellation, according to Strabo, is, that in a military expedition a sedition arising between the Celtici and Turduli after crossing that river, in which the general was slain, they remained dispersed there; and from this circumstance it came to be called the river of Lethe, or Oblivion. It is now called Lima.

BELISARIUS, general of the emperor Justinian's army, who overthrew the Persians in the East, the Vandals in Africa, and the Goths in Italy. See Rome. But after all his great exploits, he was falsely accused of a conspiracy against the emperor. The real conspirators had been detected and seized, with daggers hidden under their garments. One of them died by his own hand, and the other was dragged from the sanctuary. Pressed by remorse, or tempted by the hopes of safety, he accused two officers of the household of Belisarius; and torture forced them to declare that they had acted according to the secret instructions of their patron. Posterity will not hastily believe, that a hero, who in the vigor of life had disdained the fairest offers of ambition and revenge, should stoop to the murder of his prince, whom he could not long expect to survive. His followers were impatient to fly; but flight must have been supported by rebellion, and he had lived enough for nature and for glory. Belisarius appeared before the council with less fear than indignation: after forty years service, the emperor had prejudged his guilt; and injustice was sanctified by the presence and authority of the patriarch. The life of Belisarius was spared, but his fortunes were sequestered; and, from December to July, he was guarded as a prisoner in his own palace. At length his innocence was acknowledged, his freedom and honors were restored, and death, which might be hastened by resentment and grief, removed him from the world about eight months after his deliverance. That he was deprived of his eyes, and reduced by envy to beg his bread, is a fiction of later times; which has obtained credit, or rather favor, as a strange example of the vicissitudes of fortune. The source of this idle fable may be derived from a miscellaneous work of the twelfth century, the Chiliads of John Tzetzes, a monk. He relates the blindness and beggary of Belisarius in ten verses, Chiliad iii. No. 88. 339—348. in Corp. Poet. Græc. tom. ii. p. 311. This romantic tale was imported into Italy with the language and MSS. of Greece; repeated before the end of the fifteenth century by Crinitus, Pontanus, and Volaterranus; attacked by Alciat for the honor of the law, and defended by Baronius, A. D. 561, No. 2, &c. for the honor of the church. Tzetzes himself had read in other chronicles, that Belisarius did not lose his sight, and that he recovered his fame and fortunes. The statue in the Villa Borghese at Rome, in a sitting posture, with an open hand, which is vulgarly given to Belisarius, may be ascribed with more dignity to Augustus in the act of propitiating Nemesis.—*Winkelman's Hist. de l'Art*, tom. iii. p. 266.

BELI'VE. *adv.* bılıve, Sax. probably from bı and lıꝼe, in the sense of vivacity, speed, quickness. Speedily; quickly: a word out of use.

> By that same way the direful dames do drive
> Their mournful chariot, fill'd with rusty blood,
> And down to Pluto's house are come *belive*.
> *Faerie Queene.*

BELK, one of the Serangani islands in the Eastern seas, high, and with a bold north coast. It is partly cultivated, and the inhabitants have plenty of cocoa nuts and yellow wax. It is the most northerly of the group, which consists of three, and lies about twelve miles from Magindanao.

BELL, *v.* & *n.* }
Bel'fry, }
Bel'rope, }
Bel'ringer. }
Bel, Sax. supposed by Skinner to come from *pelvis*, Latin, a basin; Ang.-Sax. bellan, signifies to bellow and to sound a bell. A vessel, or hollow body of cast metal, formed to make a noise by the act of a clapper, hammer, or some other instrument striking against it. Bells are in the towers of churches, to call the congregation together. It is used for any thing in the form of a bell, as the cups of flowers. Belfry is a tower where bells are hung.

Get thee gone, and dig my grave thyself,
And bid the merry *bells* ring to thy ear,
That thou art crowned, not that I am dead.
Shakspeare.

Now see that noble and most sov'reign reason
Like sweet *bells* jangled out of tune. *Id.*

As the ox hath his yoke, the horse his curb, and the faulcon his *bells*, so hath man his desires.
Id. As You Like It.

Where the bee sucks, there suck I,
In a cowslip's *bell* I lie. *Id. Tempest.*

What time the native *bellman* of the night,
The bird that warned Peter of his fall,
First rings his silver *bell* t' each sleepy wight,
That should their mindes up to devotion call,
She heard a monstrous noise below the hall.
Spencer.

The humming bees, that hunt the golden dew,
In summer's heat on tops of lilies feed,
And creep within their *bells* to suck the balmy seed.
Dryden.

He has no one necessary attention to any thing but the *bell*, which calls to prayers twice a-day.
Addison, Spectator.

How too like is this (cracked) *bell* to scandalous and ill-lived teachers! His calling is honourable: his noise is heard far enough: but the flaw which is noted in his life, mars his doctrine, and offends those ears which else would take pleasure in his teaching. *Bishop Hall.*

When cockle-shells turn silver *bells*,
And muscles grow on every tree,
When frost and snow shall warm us aw,
Then sall my love prove true to me.
Burns's Ballads.

But the sound of the church-going *bell*
These vallies and rocks never heard,
Never sighed at the sound of a knell,
Or smiled when a Sabbath appear'd. *Cowper.*

To bear the BELL. To be the first; from the wether, that carries a bell among the sheep, or the first horse of a drove that has bells on his collar.

The Italians have carried away the *bell* from all other nations, as may appear both by their books and works. *Hakewell.*

To shake the BELLS. A phrase in Shakspeare, taken from the bells of a hawk.

Neither the king, nor he that loves him best,
The proudest he that holds up Lancaster,
Dares stir a wing, if Warwick *shakes his bells.*
Shakspeare.

To BELL, *v. n.* from the noun. To grow in buds or flowers, in the form of a bell.

Hops, in the beginning of August, *bell* and are sometimes ripe. *Mortimer.*

BELL-FASHIONED, *adj.* from bell and fashion. Having the form of a bell; campaniform.

The thorn-apple rises with a strong round stalk, having large *bell-fashioned* flowers at the joints.
Mortimer.

BELL. The parts of a bell, are the body or barrel, the clapper, on the inside, and the ear or cannon, by which it hangs to a large beam of wood. The matter of which it is usually made is a composition called bell-metal. The thickness of a bell's edge is usually one-fifteenth of the diameter, and its height twelve times its thickness. The best founders have a diapason, or bell-scale, wherewith they measure the size,
thickness, weight, and tone of their bell
the method of casting bells, see FOUNDR

The theory of the sound of bells belon
perly to acoustics, but we may here
that the most sonorous bell, according to
by M. Reamur (Mem. Acad. Par. 172
be formed of the segment of a spher
sound of a bell, says the Campanalogia
from a vibratory motion of the parts
much like that of a musical chord. Th
of the clapper, it is evident, must cha
figure of the bell, and of round make
but the metal having a great degree of el
that part which the stroke drove farthe
the centre will fly back again, and th
somewhat nearer to the centre than bef
that the two points, which before were
tremes of the longer diameter, now becom
of the shorter. Thus, the circumference
bell undergoes alternate changes of figu
by means thereof gives that tremulous
to the air, in which sound consists. M
rault maintains, that the sound of the sa
or chord, is a compound of the sound of
veral parts thereof; so that where the p
homogeneous, and the dimensions of th
uniform, there is such a perfect mixtur
these sounds, as constitutes one uniform,
even sound: and the contrary circum
produce harshness. This he proves fr
bell's differing in tone according to the p
strike; and yet strike it anywhere, the
motion of all the parts. He, therefore, c
bells as composed of an infinite number of
which according to their different dime
have different tones, as chords of d
lengths have; and when struck, the vib
of the parts immediately struck, determi
tone; being supported by a sufficient nu
consonant tones in the other parts. Mr.
bee, and others have found by experime
the sound of a bell struck under wat
fourth deeper than in the air: though Ma
says, it is of the same pitch in both el
This writer has treated largely of the d
metals of which bells are formed, of their
crassitude, and degrees of ponderosity,
respect each other in a given series.

Bells are observed to be heard farther,
on plains, than on hills; and still farther
leys than on plains; the reason of which
not be difficult to assign, if it be con
that the higher the sonorous body is, th
is its medium; consequently the less im
receives, and the less proper vehicle it
convey it to a distance.

The use of bells is very ancient as well
tensive. We find them among Jews,
Romans, Christians, and Heathens, variou
plied, as on the necks of men, beasts,
horses, and sheep: but chiefly hung in
ings, either religious, as in churches, t
and monasteries; or civil, as in houses,
and baths; or military, as in camps and
towns. Among the Jews it was ordaine
the lower part of the blue tunic which t
priest wore, when he performed certain r
ceremonies, should be adorned with po
ates and golden bells, intermixed equally

equal distances. The sacred historian mentions the use and intent of them in Exod. xxviii. 33—35. 'It shall be upon Aaron to minister, and his sound shall be heard when he goeth in unto the holy place before the Lord, and when he cometh out, that he die not.' The sound of the numerous bells gave notice to the assembled people that the most awful ceremony of their religion had commenced. It was a signal, perhaps, that they should prostrate themselves at the moment in which the high priest entered the sanctuary with a vessel of incense, in order that their prayers might ascend with the column of fragrance before the throne of heaven. The kings of Persia, from a remote period, are said to have had the hems of their robes adorned like the Jewish high priests with pomegranates and golden bells.

The poet, Cowper, gives a moral turn to this circumstance, worth remembering:

> With golden bells, the priestly vest,
> And rich pomegranates bordered round,
> The need of holiness expressed,
> And called for fruit as well as sound.

The prophet Zachariah, xiv. 20, speaks of bells hung to war-horses.

Among the Greeks, those who went the nightly rounds in camps or garrisons, carried with them a little bell, which they rung at each centry-box to see that the soldiers on each watch were awake. A codonophorous, or bell-man, also walked in funeral processions, at a distance before the corpse, not only to keep off the crowd, but to advertise the flamen dialis to keep out of the way for fear of being polluted by the sight, or by the funeral music. The priest of Proserpine, at Athens, called hierophantus, rung a bell to call the people to sacrifice. There were also bells in the houses of great men to call up the servants each morning. Zonaras assures us, that bells were hung with whips on the triumphal chariots of their victorious generals, to put them in mind that they were still liable to public justice. Bells were put on the necks of criminals going to execution, that persons might be warned by the sound to avoid meeting so ill an omen, as the sight of the hangman, or the condemned criminal. Maggi has given the print of a wretch whose neck is weighed down by an enormous bell, while his back is exposed to the lash of the hangman.

The responses of the Dodonæan oracle were doubtless in part conveyed by bells. The description of it which Strabo has left (lib. vii.), the *lebetes* of Virgil, the *pelves* of Juvenal, and the *tironitus aheni* of Ausonius, admit of no other interpretation. The bells were of copper, and so suspended round the temple, that one being struck put the whole in motion; and, by the manner in which the sounds died away, the priestess framed her revelation. Plutarch mentions (Symp. xiv.) a bell in the Grecian fish-markets, which reminds the writer of this article of an exactly similar construction in the little sea-port town of his birth.

Strabo connects with this custom a curious story. A musician being deserted by his auditory in the town of Jassus, found it was the fish-bell which had attracted them away. One person alone remained, as if decidedlypreferring his melody. The grateful harper approached, thanked his hearer for the honor which he paid to the art, and congratulated him on the superior purity of taste which prevented him from accompanying the rabble, which had vanished at the first stroke of the bell. 'Has the bell rung?' answered the other, 'alas! I am deaf; good morning to you!'

Ornamental bells in building, after the manner of the Chinese, were clearly in use among the Romans. Pliny (vii. 45, xxxvi. 13,) mentions the monument of Porsenna as decorated with pinnacles, each of which was surmounted by bells. The dream of Augustus transferred a similar ornament from the portals to the roof of the Capitoline Jove, (Suetonius, Oct. xci.)

On the origin of church bells, Mr. Whitaker, in his History of Manchester, observes, that bells being used, among other purposes by the Romans, to signify the times of bathing, were naturally applied by the Christians of Italy to denote the hours of devotion, and summon the people to church.

The first application of them to ecclesiastical purposes is, by Polydore Virgil and others, ascribed to Paulinus, bishop of Nola, a city of Campania, about the year 400. Hence, it is said, the names Nolæ and Campanæ were given them; the one referring to the city, the other to the country. Though others say they took the latter of these names, not from their being invented in Campania, but because it was here the manner of hanging and balancing them, now in use, was first practised. It is obvious, that during the days of early persecution, any public summons to the meetings of Christians would have betrayed them to their enemies. In Britain, bells were used in churches before the conclusion of the seventh century, in the monastic societies of Northumbria, and as early as the sixth, even in those of Caledonia. They were, therefore, used from the first erection of parish churches among us. Those of France and England appear to have been furnished with several bells. In the time of Clothair II. king of France, A. D. 610, the army of that prince was frighted from the siege of Sens, by the ringing of the bells of St. Stephen's church. The second excerption of Egbert, A. D. 750, which is adopted in a French Capitulary of 801, commands every priest, at the proper hours, to sound the bells of his church, and then to go through the sacred offices to God. And the council of Enham, in 1011, requires all the mulcts for sins to be expended in the reparation of the church, clothing and feeding the minister of God, and the purchase of church vestments, church books, and church bells. These were sometimes composed of iron in France; and in England, as formerly at Rome, were frequently made of brass. As early as the ninth century there were many cast of a large size and deep note. Ingulphus mentions, that Turketulus, abbot of Croyland, who died about A. D. 870, gave a great bell to the church of that abbey, which he named Guthlac; and afterwards six others, viz. two which he called Bartholomew and Betelin, two called Turketul and Tatwin, and two named Pega and Bega, all which rang together; the same author says, Non erat tunc tanta consonantia campanarum in tota Anglia. Not long after, Kinseus, archbishop of York, gave two great bells to the church of St. John at Beverly, and at the same time provided that other churches in his diocese should be furnished with bells. Mention is made by St. Aldhem, and William of Malmesbury, of bells given by St. Dunstan to the churches in the west. The number of bells in every church gave occasion to a curious and singular piece of architecture in the campanile or bell-tower; an addition, which is more susceptible of the grander beauties of architecture than any other part of the edifice, and is generally therefore the principal or rudiments of it. It was the constant appendage to every parish church of the Saxons, and is actually mentioned as such in the laws of Athelstan. The Greek Christians are usually said to have been unacquainted with bells till the ninth century, when their construction was first taught them by a Venetian. But it is not true that the use of bells was entirely unknown in the ancient eastern churches, and that they called the people to church, as at present, with wooden mallets. Leo Allatius, in his Dissertation on the Greek Temples, proves the contrary from several ancient writers. He says bells first began to be disused among them after the taking of Constantinople by the Turks; who, it seems, prohibited them, lest their sound should disturb the repose of souls, which, according to them, wander in the air. He adds, that they still retain the use of bells in places remote from the intercourse of the Turks, particularly very ancient ones in Mount Athos. F. Simon thinks the Turks prohibited the Christians the use of bells, rather from political than religious reasons, as the ringing of bells might serve as a signal for the execution of revolts, &c.

In the dark ages bells were constantly baptised and anointed, oleo chrismatis, as well as exorcised and blessed by the bishop; from a belief, that when these ceremonies were performed, they had a power to drive the devil out of the air, to calm tempests, extinguish fire, and even to revive the dead. The ritual for these ceremonies is contained in the Roman pontifical; and it was usual in their baptism to give to bells the name of some saint. In Chauncey's History of Hertfordshire, p. 383, there is a relation of the baptism of a set of bells in Italy with great ceremony, a short time before the publication of that work: and so late as September, 1782, the St. James's Chronicle contains an account of the lovers of ecclesiastical ceremonies running in crowds at Paris, to see the ceremony of christening the new bells of St. Sulpicius, of which the king and queen, monsieur, and madame, were the sponsors. The bells of Osney Abbey, near Oxford, were very famous; their several names were Douce, Clement, Austin, Hautecter, or rather Hautcleri, Gabriel, and John. The bells of the parish church of Winnington, in Bedfordshire, had their names cast about the ver
every one in particular, with these rhiming
ameters :—

> Nomina Campanis hæc indita sunt quoque
> 1. Hoc signum Petri pulsatur nomine Christi
> 2. Nomen Magdalen campana sonate melode
> 3. Sit nomen Domini benedictum semper in
> 4. Musa Raphaelis sonat auribus Immanuelis
> 5. Sum Rosa pulsata mundique Moria vocata
>
> *Weev. Fun*

By an old chartulary, once in the possessi
Weever the antiquary, it appears that the be
the priory of Little Dunmow in Essex,
A. D. 1501, new cast, and baptised by the
of St. Michael, St. John the Evangelist, St.
the Baptist, the Virgin Mary, and the Holy
nity. Weever further mentions, that bell
frequently this inscription:

> Funera plango, Fulgura frango, Sabbata pang
> Excito lentos, dissipo ventos, Paco cruentos.

Durandus mentions six kinds of bells i
ancient monasteries, viz. Squilla rung i
refectory; cymbalum in the cloister; nola
choir; nolula or dupla in the clock; campa
the steeple; and signum in the tower. Be
has much the same; only that for squilla he
tintinnabulum, and places the campana i
tower, and campanella in the cloister. C
place the tintinnabulum or tinniolum i
refectory or dormitory; and add another
called corrigiuncula, rung at the time of
discipline or to call the monks to be flo
The cymbalum is sometimes, also, said to have
rung in the cloister, to call the monks to m

Abroad, bells are found of great magn
In the steeple of the great church at Ro
Normandy there was in modern times a bell
the following inscription:

> Je suis George de Ambois,
> Qui trente cinque mille pois,
> Mes lui qui me pesera,
> Trente six mille me trouvera.
>
> I am George of Ambois,
> Thirtie five thousand in pois;
> But he that shall weigh me,
> Thirtie six thousand shall find me.

The great bell at St. Peter's in Rome
18,607 pounds. In the Palazzo Vecchio
rence, is one weighing 17,000 pounds; an
raised 275 feet from the ground. Great T
Christ Church, Oxford, weighs 17,000 po
of Lincoln, 9894 pounds. The bell of St.
London, 8400 pounds.

It is a common tradition that the be
King's College chapel, in the university of
bridge, were taken by Henry V. from
church in France, after the battle of Agin
They were taken down some years ago, an
to Phelps, a bell-founder, in Whitechapel.

The Musurgia Universalis of Kircher de
a bell at Erfurth, which was cast in th
1497, by Gerard Von de Campis, at the
of the citizens, the neighbouring prince
noblemen. Its thickness is a quarter an
quarter of an ell; its height four ells and
quarters; its exterior periphery fourteen el
a half; and its weight 252 cwt. Twen

men are required to ring it, besides two men who, on each side, push forward the clapper. Its sound is plainly heard at the distance of three German leagues. Its fundamental note is D sol re, but it gives also F faut, making a consonance of a minor third. But from the above account, Sir John Hawkins (Hist. of Music, iv, 211) has doubted whether the bell is ever rung at all; that is, whether it is elevated by a rope and wheel. The action of the twenty-four men is obscurely described; but the two are plainly employed not in ringing but in tolling.

A bell in the church of St. Ivan, at Moscow, weighs 127,836 pounds. But the wonder of travellers is the unsuspended bell in the Kremlin of that city. It was cast in 1653, in the reign of the empress Anne, and a fire took place in the building erected over it. The metal thus became hot, and the water, which fell upon it while in this state, occasioned a fracture, by which it was rendered useless. Dr. Clarke, in his Travels, has given the following account of it:—'It reaches from the bottom of the cave to the roof. The entrance is by a trap-door, placed even with the surface of the earth. We found the steps very dangerous; some of them were wanting, and others broken, which occasioned me a severe fall down the whole extent of the first flight, and a narrow escape for my life in not being dashed upon the bell. In consequence of this accident, a sentinel was stationed afterwards at the trap-door, to prevent people becoming victims to their curiosity. He might have been as well employed in mending the steps, as in waiting all day to say they were broken. The bell is truly a mountain of metal. They relate that it contains a very large proportion of gold and silver; for that, while it was in fusion, the nobles and the people cast in, as votive offerings, their plate and money. It is permitted to doubt the truth of traditionary tales, particularly in Russia, where people are much disposed to relate what they have heard, without reflecting on its probality. I have endeavoured, in vain, to assay a small part. The natives regard it with superstitious veneration, and they would not allow even a grain to be filed off. At the same time it may be said, the compound has a white shining appearance, unlike bell-metal in general; and perhaps its silvery aspect has strengthened, if not given rise to, a conjecture respecting the richness of its materials. On festival days, the peasants visit the bell as they would a church, considering it an act of devotion; and they cross themselves as they descend and ascend the steps. The bottom of the pit is covered by water, mud, and large pieces of timber, which, added to the darkness, render it always an unpleasant and unwholesome place, in addition to the danger arising from the steps which lead to the bottom. I went frequently there, in order to ascertain the dimensions of the bell with exactness. We applied a strong cord close to the metal in all parts of its periphery, and round the lower part where it touched the ground; taking care at the same time not to stretch the cord. From the piece of the bell broken off, it was ascertained that we had thus measured within two feet of its lower extremity. The circumference obtained was sixty-seven feet and four inches; which allows a diameter of twenty-two feet, five inches, and one third of an inch. We then took the perpendicular height from the top of the bell, and found it correspond exactly with the statement made by Hanway, namely, twenty-one feet, four inches and a half. In the stoutest part, that in which it should have received the blow of the hammer, its thickness equalled twenty-three inches. We were able to ascertain this, by placing our hands under water where the fracture had taken place, which is above seven feet high from the lip of the bell. The weight of this enormous mass of metal has been computed to be 443,772 pounds; which, if valued at three shillings a pound, amounts to £66,565. 16s. lying unemployed, and of no use to any one.

In 1684, Abraham Rudhall, of Gloucester, brought the art of bell-founding to great perfection. His descendants in succession continued the business; and by a list published by them, it appears, that at Lady-day, 1774, the family, in peals and odd bells, had cast to the amount of 3594. The peals of St. Dunstan's in the east, and St. Bride's, London, and St. Martin's in the Field's, Westminster, are in the number. See FOUNDRY.

The practice of ringing bells in change, or regular peals, is said to be peculiar to England; whence Britain has been termed the bell-ringing island. The custom seems to have commenced in the time of the Saxons, and was common before the conquest. The tolling a bell is nothing more than the producing a sound by a stroke with the clapper against the side of the bell, the bell itself being in a pendent position and at rest. In ringing, the bell, by means of a wheel and a rope, is elevated to a perpendicular; in its motion to this situation the clapper strikes forcibly on one side, and in its return downwards on the other side of the bell, producing at each stroke a sound. There were in London, formerly, many societies of ringers, particularly one known by the name of the College Youths: of this it is said the celebrated Sir Matthew Hale, was, in his youthful days, a member; and in the life of that judge, by bishop Burnet, are some facts that at least prove his attachment to such exercises. Ringing has sometimes claimed the name of a science, and peals have been composed which bear the name of inventors. Some of the most celebrated of these were composed about fifty years ago by one Patrick. This man was a maker of barometers; in his advertisements he styled himself Torricellian Operator, from Torricelli, who invented instruments of this kind. The ancient peals do not appear to have exceeded five in number. Holden, in his Treatise on the natural grounds of Harmony, remarks, that 'the completest and most perfect ring is a peal of six, in which, whether ascending or descending, the hemitone holds the middle position, as it does in both the natural and the durum hexachord; in the molle hexachord the tritonus intervenes.' cap. vi. Stowe, in his Survey of Cornhill Ward, mentions, that in 1430, a sixth bell was added to the peal of five in the church of St. Michael; after which it was accounted the best ring of bells, for harmony and sweetness, in all England.

The theory of ringing may be completely learned from either the Campanologia (of 1733), or the Harmonia Universalis (the Latin not the French work) of Mersennus, in which he has enumerated and reduced to musical notation, the changes of the hexachord, or the Tintinnalogia, or Art of Ringing, (1668), in which every possible change of diatonic sound, from two bells to twelve, is laid down; and innumerable passages presented wholly new to musical composition. This may easily be imagined, when it is recollected, that in the simple arrangements of natural sound, without the intervention of a single flat or sharp, twelve bells produce 479,001,600 changes. Not all the changes, however, if reduced into an air, would be equally agreeable or practicable; and it is somewhat remarkable, that in the art of ringing, melody has never been studied. Mechanical order and succession has been all in all; and Dr. Burney, from whom we borrow the observation, states, that even in the clams or collision of two bells together in counterpoint, no knowledge of harmony has ever been displayed.

The number of changes upon a given number of bells is readily calculated: $S = 1 \times 2 \times 3 \times 4 \times \ldots . n$. So that the changes upon

2 bells are	2
3 ———	6
4 ———	24
5 ———	120
6 ———	720
7 ———	5,040
8 ———	40,320
9 ———	362,880
10 ———	3,628,800
11 ———	39,916,800
12 ———	479,001,600

No peal, beyond twelve, we believe, has ever been erected. The churches having twelve bells, in London, are St. Bride's, St. Martin's in the Fields, St. Michael's Cornhill, St. Leonard's Shoreditch, St. Saviour's Southwark, St. Giles's Cripplegate, and Christ Church Spitalfields. In the country, York Minster, Cirencester, Great St. Mary's Cambridge, St. Martin's Birmingham, St. Peter's Mancroft Norwich, St. Chad's Shrewsbury, and Payne Church Gloucestershire, have the same number.

It is calculated that twelve changes may be rung in one minute, that is 720 in an hour. On this computation, all the possible changes on twelve bells could not be rung in less than seventy-five years, ten months, and ten days.

A peal is the whole number of changes which can be rung on any given number of bells: and as the style of each peal differs according to the variation in the succession of these changes, so each peal is distinguished by a peculiar name, as times are in psalmody. The peal of regular permutations on five bells, is called a grandsire. These permutations are represented in the following diagram.

12345	13542	31254	25
———	31524	32145	52
21354	35142	23415	54
23145	53412	24351	45
32415	54321	42531	43
34251	45231	45213	34
43521	42513	54123	B 31
45312	24153	51432	13
54132	B 21435	15342	14
51423	12453	13524	41
15243	14235	31542	43
12534	41253	35124	34
21543	42135	53214	32
25134	24315	52341	23
52314	23451	25431	25
53241	32541	24313	52
35421	35214	42153	51
34512	53124	B 41235	15
43152	51342	14253	14
B 41325	15432	12435	41
14352	14523	21453	45
13425	41532	24135	54
31452	45123	42315	53
34125	54213	43251	35
43215	52431	34521	32
42351	25341	35412	23
24531	23514	53142	S 21
25413	32154	51324	12
52143	S 32145	15234	12
51234	13254	12543	
15324	13245	21534	

The letter B, in the above example, signi
bob, or an alteration in the direction o
changes. S denotes single; a term used
half the peal is rung, and, also, when one c
only remains. A plain bob, grandsire bo
single bob minor, is the peal of regular per
tion on six bells. A grandsire treble is the
on seven. A bob major the same on
Caters the same on nine. Ten in, or bob
the same on ten. Cinques the same on el
Twelve in, or bob maximus, the same on tw
In the grandsire treble complete, there are
changes: to ring through which, admittin
changes in an hour (a number which cann
kept up), seven hours would be required.
plain that this is the most extensive con
peal which can be rung. The next in
the bob major, contains 40,320 changes
could not be rung even on a light peal i
than twenty-four hours, a length of time
which no eight men could stand to the

These regular changes, in which the pl
two bells only is altered in each roun
called plain changes. When the place of
than two bells is altered, and the changes
succeed each other progressively, but by
vals, they are called cross changes.

The bell, the regular motion of which
the rest, is called the hunt, and it is ge
the treble bell. In the above example, the
1 represents the hunt; it moves from it
place into the second's place, and so on
reaches fifth's place, which is called hunt
behind. Here it strikes two blows, calle
ing behind a whole pull; and it then hunt
again in the reverse order, and so on to t

of the peal. 'The first step,' says the Campanologia, 'he (the learner) makes in this art, is to learn perfectly to set a bell, both back stroke and fore; and to have it so much at his command, as that he may be able to cut it down at either hand (being the sally or back stroke), and set it again the next pull; without which he cannot attain to any perfection or knowledge in this art. And, to make this the more easy to him, he must observe to keep the rope tight or stiff, to stand upright to his bell, not stirring, or using any ungenteel posture; which in ringing, as well as dancing, is very ridiculous. When he is master of this, he may then try to ring one round in three, four, five, or six bells, and afterwards in eight or ten, wherein, as in all ringing, the principal thing to be observed is a true and exact compass, which in music is called time, otherwise the ringing becomes very unpleasing and disturbing to the hearers, and may be compared to the nauseous music of a country fiddle-player before a company of boors and peasants going to the celebration of a homely country-wedding.' p. 11.

In the Low Countries, particularly at Ghent and Antwerp, is a species of chime termed carillons, played with great labor by a performer, the carrilloneur, upon a number of bells, disposed in a scale of tones and semitones like a harpsichord. The bass is played by pedals; the treble by violent strokes of the hands edgeways upon a series of projecting sticks, which act as keys. From this barbarous and unwieldy music, the term carillon has been applied to a small keyed instrument, imitating a peal of hand-bells, in which box hammers are made to strike iron bars of different lengths. Handel employed this instrument as an accompaniment in his air, 'O let the merry bells ring round,' in L'Allegro; and to the chorus, 'Welcome, welcome, mighty king,' in Saul. See CHIMES.

The Passing BELL was anciently rung for two purposes; one, to bespeak the prayers of the minister and all good Christians for a soul just departing; the other, to drive away the evil spirits who were supposed to wait about the house, ready to seize their prey, or to molest and terrify the soul in its passage. By the ringing of this bell, for Durandus informs us evil spirits are much afraid of bells, they were thought to be kept aloof: and the soul, like a hunted hare, gained the start, or had what is by sportsmen called law. Hence, perhaps, exclusive of the additional labor, was occasioned the high price demanded for tolling the greatest bell in the church. This dislike of spirits to bells is mentioned in the Golden Legend, by W. de Worde. 'It is said, the evil spirytes that ben in the regyon of thayre, doubte moche when they here the belles rongen: and this is the cause why the bells ben rongen whan it thondreth, and whan grete tempeste and outrages of wether happen, to the ende that the fiends and wycked spirytes shold be abashed and flee, and cease of the movynge of tempeste.' Lobineau observes, that the custom of ringing bells, at the approach of thunder, is of some antiquity; but that the design was not so much to shake the air and so dissipate the thunder, as to call the people to church, to pray that the parish might be preserved from disasters.

Legends Concerning BELLS, as might be expected, are endless. The bells at Canterbury are said to have rung of themselves on the murder of Thomas à Becket: but the influence of bells as exorcists has occasionally failed. The history and antiquities of Shrewsbury, by Phillips, contains the following item: 'This yere 1533 upon twelffe daye in Shrewsbury, The Dyvyll appearyd in Saint Alkmonds churche there when the priest was at high masse, with great tempeste and darknesse, so that as he passyd through the churche, he mounted up the steeple in the sayde churche, tering the wyers of the seid clocke, and put the print of hys clawes upon the 4th bell, and tooke one of the pynnacles away with hym, and for thetyme stayed all the bells in the churches within the said towne, that they could neyther toll nor ringe.' It is clear that this is simply the reference of a thunder storm to diabolical agency. We are told of a bell of St. David, which cured the King of Dublin of a mortal disease by applying it to his cheek. This was preserved in the church of Glascwm in Radnorshire. It was portable, and endowed with great virtue. Giraldus Cambrensis says, that 'a certain woman secretly conveyed this bell to her husband, who was confined in the castle of Raidergwy near Warthrenia, which Rhys, son of Gruffydd, had lately built, for the purpose of his deliverance. The keeper of the castle not only refused to liberate him for this consideration but seized and detained the bell; and in the same night, by Divine vengeance, the whole town, except the wall on which the bell hung, was consumed by fire.' A similar bell, called Bangu, was kept in all Welsh churches during Popish times. On the day of a funeral, the sexton took it to the house of the deceased. When the procession began a Psalm was sung, and the bellman sounded the Bangu in a solemn manner, till the corpse arrived at the church. Within the memory of living persons this custom is said to have prevailed in Wales. We must mention yet one more marvellous bell in Ireland, which, unless it were tied fast every night, used to wander far from home into another church! We read also of a comet, which in the time of Pope Calixtus III. cast upon the Turks all the mischief which it threatened, in consequence of the ringing of bells, by order of the pontiff, precisely at noon. *Plat. in vita.*

We may finally observe (with Stavely, on Churches,) that anciently and sometimes besides the before specified offices, an extraordinary and dreadful use was also made of bells, and that was the cursing by Bell, Book, and Candle: the manner whereof, he adds, I hope, will not be altogether impertinent here to relate; out of an ancient Festival, and the articles of the general great curse, found at Canterbury, A. D. 1562. It was solemnly thundered out once in every Quarter; 'The Fyrst Sonday of Advent, at comyng of our Lord Jhesu Cryst: the fyrst Sonday of Lenteen: The Sonday in the Feste of the Trynyte: and Sonday within the Utas (Octaves) of the blessed Vyrgin our Lady St. Mary.' At which action the prelate stands in the pulpit in his Aulbe, the cross being lifted up before him and the candles lighted on both sides of it, and begins thus, 'By authority, God, Fader, Son, and Holy-Ghost, and the glorious Moder and Mayden, our Lady St. Mary, and the Blessed Apostles Peter, and Paul, and all Apostles, Martyrs, Confessors, Vyrgyne, and the hallows of God; All thos byn accursed that purchases writts, or letters of any leud court, or to let the processe of the law of holy church of causes that longen skilfully to christen court, the which should not be demed by none other law: And all that maliciously bereaven holy church of her right, or maken holy chirch lay fee, that is hallowed and blessed. And also all thos that for malyce or wrathe of parson, vicare, or priest, or of any other, or for wrongfull covetyse of himself witholden rightful tyths, and offerings, rents, or mortuaries from her own parish church, and by way of covetyse fals lyche taking to God the worse, and to hemself the better, or else torn him into another use, then hem oweth. For all chrysten man and women been hard bound on pain of deadly sin, not onlyche by ordinance of man, but both in the ould law, and also in the new law, for to pay trulyche to God and holy chirch the tyth part of all manner of encrease that they winnen trulyche by the grace of God, both with her travell, and alsoe with her craftes whatsoe they be truly gotten.' 'And then concludes all with the curse itself, thus:' 'And now by authoritie aforesaid we denounce all thos accursyd that are so founden guyltie, and all thos that maintaine hem in her sins or gyven hem hereto either help or councell, soe they be departed froe God, and all holi chirch; and that they have noe part of the passyon of our Lord Jhesu Cryst, ne of noe Sacraments, ne no part of the prayers among christen folk; But that they be accursed of God, and of the chirch, froe the sole of her foot to the crown of her hede, sleaping and waking, sitting and standing, and in all her words, and in all her werks; but if they have noe grace of God to amend them here in this lyfe, for to dwell in the pain of hell for ever withouten end; fiat: fiat. Doe to the boke: quench the candles: ring the bell: Amen, Amen.' 'And then the book is clapp'd together, the candles blown out, and the bells rung, with a most dreadful noise made by the congregation present bewailing the accursed persons concerned in that black doom denounced against them.' 236.

The uses of bells were summed up in the following distich, as well as one above mentioned:

Laudo Deum verum, plebem voco, conjuga cierum,
Defunctos ploro, pestem fugo, festa decoro.

Bell, in architecture, is used to denote the body of the Corinthian and Composite capital, by reason of its resemblance to the figure of a bell inverted. It is also called vase and tambour, and sometimes corbeil. The naked of the bell should always be even and perpendicular with the bottom of the flutings of the column. See Architecture.

Bell, in chemistry, denotes a glass vessel placed over some matter in a state of exhalation, either to collect the vapor or gather the flowers. Chemical bells are a sort of receptacles chiefly used in preparing the oil or spirit of sulphur, for
gathering and condensing fumes into a liquo

Bell, Diving. See Diving.

Bell (Benjamin), member of the Royal Co
of Surgeons, and F.R.S. Edinburgh, was
at Dumfries, in 1749, and after a classical ed
tion, under the celebrated Dr. George Chap
began his medical studies at Edinburgh, in 1
About 1770 he went to Paris, and from th
to London. Mr. Bell returned to Edinb
in 1772, with a design of settling there.
address and dexterity, and the success o
cures in the infirmary, were soon observed,
his fame was not confined to the circle of
tice: in 1778 he published A Treatise on
management of Ulcers, &c. which soon p
through several editions, and was occasionally
proved by the author. He afterwards inco
rated it into his System of Surgery, of which
Bell published the first volume in 1783 which
well received. He completed it in 1788. B
the year 1801 it had gone through six editi
receiving, as they came out, whatever impr
ments his experience could add: the 7th edi
considerably improved, was that year publi
in 7 vols. 8vo. In the year 1793 Mr. Bell
lished a Treatise on the Gonorrhœa Virul
and Lues Venerea, 2 vols. 8vo. which pass
a third edition. In 1794 appeared a mor
larged treatise on The Hydrocele, on Sarc
or Cancer, and other diseases of the Testes,
what was contained in his System of Sur
In 1782 Mr. Bell published the first volum
a Series of Essays on Agriculture, with a
for the speedy improvement of land in Great
tain; the 2d volume of which he was prep
for the press immediately before his death.
also sent abroad into the world several an
mous political tracts. Mr. Bell marri
daughter of the Rev. Dr. Hamilton, profess
Divinity; and some years before his deat
was assisted in his professional pursuits by
eldest son, Mr. George Bell. He made diff
tours for the improvement of his health abou
year 1800, but nature continued to fail, an
expired without any sympton of pain, on
April, 1806.

Bell (John), an eminent surgeon of
burgh, delivered anatomical lectures there,
published some professional works of conside
importance. Among these are Discourses o
Nature and Cure of Wounds, 8vo; The An
of the Human Body, 3 vols. 8vo; Principl
Surgery, 3 vols. 4to. A few years ago he t
led to Italy, and dying at Rome in 182
for the press a work published in 1825 wi
title of Observations on Italy, 4to.

Bell (Henry Nugent), a student of the
Temple, of considerable heraldic and gene
cal research. His exertions were the mea
the recovery of the dormant Huntingdon
age. He died October 18, 1822, on the
verdict was given against him for a sum of
advanced to him by Mr. Cooke, an engrave
wards the investigation of a claim to an
He published an account of the claim t
Huntingdon peerage.

Bell (Elizabeth), of Kinvaid, and her
Mary Gray, of Lednock, celebrated in th
known song, Bessy Bell and Mary Gray,

both natives of Perthshire, where these estates are situated. The history of these young ladies is recorded by the ministers of Methven and Monedie, in Sir J. Sinclair's Stat. Acc. Vol. III. 604; and X. 621.

BELLA (Stefano De la), an eminent engraver, born at Florence, A.D. 1610. His father was a goldsmith; and he began to follow that business, but whilst learning to draw, Callot's prints fell into his hands; with which he was so delighted, that he prevailed upon his father to permit him to apply to engraving; and he became the disciple of Canto Gallina, the instructor of Callot. Bella at first imitated the manner of Callot, but soon adopted one, his own, which in freedom and spirit is said even to have surpassed that of his fellow pupil. He went to Paris A.D. 1642, where he formed an acquaintance with Israel Silvestre, and was much employed by Henriete, Silvestre's uncle. Some time after, Cardinal Richelieu engaged him to go to Arras and make drawings of the siege of that town by the royal army. After staying a considerable time at Paris, his family affairs obliged him to return to Florence; where he obtained a pension from the Great Duke, and was appointed to instruct Cosmo, his son, in the art of design. He was subject to violent head-aches, which terminated his life, A.D. 1664, when he was only fifty-four years of age. He drew very correctly, with great taste, and vast fertility of invention. The animation which appears in his works compensates for their slightness, which we can hardly be surprised at when we are told that he engraved 1400 plates.

BELLADONA, in botany the trivial name of a species of Atropa. See ATROPA.

BELLADONA LILY. See AMARYLLIS.

BELLAI (William du), lord of Langey, a French general who signalised himself in the service of Francis I. He was also an able negociator, so that the emperor Charles V. used to say, that Langey's pen had fought more against him than all the lances in France. He was sent to Piedmont in quality of viceroy, where he took several towns from the Imperialists. His address in penetrating into the enemy's designs was surprising. In this he spared no expense, and thereby had intelligence of the most secret of the imperial councils. It being then the interest of France to favor the king of England, he was extremely active in influencing some of the French universities to give their judgment agreeable to the desire of Henry VIII. on the subject of divorcing Queen Catharine. He was sent several times into Germany to the princes of the Protestant league, and was made a knight of the order of St. Michael. He was also a man of learning, and composed several works; the most remarkable of which was the History of his Own Times, in Latin, divided into several parts, each consisting of eight books; most of which, however, have been lost. He died at St. Saphorin, between Lyons and Roan, the 9th January, 1542, and was buried in the church of Mans.

BELLAMORESKOY-LEPOROI, a province of Russian Lapland, on the White Sea, which is called in the language of the country Bella or Bieloi More.

BELLAMY (Thomas), was born at Kingston-upon-Thames in 1745, and bred a hosier, became subsequently a publisher, and also an author. Among other things, he produced Sadaski, a novel, Lessons from Life, Miscellanies, and The Friends, a musical interlude. He was the original projector and editor of the Monthly Mirror. He died in 1800.

BELLARDIA, in botany, a genus of plants, of the class tetandria: order monogynia: CAL. four-cleft: NECT. with a four-lobed margin, surrounding the style: CAPS. two-celled, two-partible, many-seeded. One species; a native of Guiana.

BELLARMIN (Robert), an Italian jesuit, one of the best controversial writers of his time. In 1576 he read lectures at Rome with such applause, that Sixtus V. sending a legate into France in 1590, appointed him as an attendant divine, in case any dispute should arise in religion. He returned to Rome, and was raised successively to different offices, till at last, in 1599, he was honored with a cardinal's hat; his acceptance of which, it is said, they were obliged to force, by threatening him with an anathema, in case of refusal. It is certain that no jesuit ever did greater honor to his order, and that no author ever so well defended the Romish church. Protestants have owned this; for, during the space of fifty years, there was scarcely any considerable divine among them, who did not fix upon this author for the subject of his books of controversy. Notwithstanding the zeal with which he maintained the power of the pope over the temporality of kings, he displeased Sixtus V. in his work De Romano Pontifice, by insisting that the power which Jesus Christ gave to his vicegerent was only indirect, and had the mortification to see it put into the index of the Inquisition, though it was afterwards removed. He left, at his death, one half of his soul to the Virgin Mary, and the other to Jesus Christ.

BELLASPOOR, a town of Delhi, Hindostan, on the east side of the Sutubje river, which is here 100 yards broad. Lat. 31° 35′ N., long. 76° 21′ E. It is well built, and exhibits a regularity not often seen in this part of Hindostan. The streets are roughly paved, and the houses built of stone and mortar. From Bellaspoor, fertile valleys, though not wide, extend to Bipolie; and it is the residence of the ranny, or female ruler of the Calowr territory.

BELLATRIX, in astronomy, a ruddy glittering star of the second magnitude, in the left shoulder of Orion. It takes its name from bellum, war, as being anciently supposed to have a great influence in kindling wars, and forming warriors.

BELLE,
BELL'YCHE,
BEL'DAM,
BEL'SIRE,
BELL'IBONE.
Belle, Fr., from the Latin *bellus*, is applied to the female, as beau to the male. *Beldam*, now a term of derision and reproach, literally signifies fair lady. *Bellibone*, bonny belle; bonny lass; *Bellyche* occurs in Pier's Plouhman. *Beldam*, in Ford, simply, as an aged woman; and Shakspeare applies it to the earth,—shakes the old beldame earth: he uses it, however, in its common acceptation. *Belsire* occurs in Drayton.

Who this land in such estate maintain'd,
As his great *belsire* Brute from Albion's heirs it won.
Drayton.

Pan may be proud that ever he begot
Such a *bellibone*,
And Syrinx rejoice that ever was her lot
To bear such a one. *Spenser.*
Per. I saw the bouncing *bellibone*,
Will. Hey, ho, *Bonibell*,
Per. Tripping over the dale alone,
Will. She can trip it very well.
Id. Shepherd's Calendar.

——— What motive could compel
A well-bred lord t' assault a gentle *belle?*
O say, what stranger cause, yet unexplor'd,
Could make a gentle *belle* reject a lord. *Pope.*

BELLEAU (Remi), a French poet, born at Nogent le Rotrou. He lived in the family of Renatus of Lorraine, Marquis of Elbeuf, general of the French galleys; and attended him in his expedition into Italy in 1557. This prince highly esteemed Belleau for his courage and abilities, and entrusted him with the education of his son, Charles of Lorraine. Belleau was one of the seven poets of his time, who were denominated the French Pleiades. He translated the odes of Anacreon, but is thought not to have preserved all the natural beauties of the original. His pastoral pieces are most in esteem. He also wrote an excellent poem on the Nature of Precious Stones; he died at Paris in 1577, in the family of the Duke d'Elbeuf.

BELLE de Nuit, in botany, a name given by the French to the flower of the jalap.

BELLEFOREST (Francis de), a French author, born in Guienne in 1530. He was seven years of age when he lost his father; but his mother, though left in poor circumstances, contributed all in her power to his education. He was supported some years by the queen of Navarre, sister to Francis I. Some time after, he went to study at Bourdeaux, then at Toulouse, and at last at Paris; where he became acquainted with several men of learning, and was honored with the friendship of many persons of quality. He wrote, 1. A History of the Nine Charleses of France. 2. Annotations on the Books of St. Augustine. 3. An Universal History of the World. 4. The Chronicles of Nicholas Gillet augmented. 5. An Universal Cosmography. 6. Annals, or a General History of France: and many other works. He died in 1583.

BELLEGARDE, a strong barrier town of France, in the department of the Eastern Pyrenees, and ci-devant province of Roussillon, on the frontiers of Catalonia. It commands a passage through the Pyrenean mountains. Early in the revolutionary war it was taken by Spain, and stood a severe siege by the French in July and Aug. 1794; but was obliged to surrender at discretion on the 17th of September to General Dugommier, who named it Sud-Libre. It is four miles south-east of Ceret, and fifteen south of Perpigan.

Bellegarde, a town of France, in the department of the Saone and Loire, and late province of Burgundy, seated on the Saone, fifteen miles north-east of Chalons. Long. 5° 10′ E., lat. 46° 57′ N.

BELLEISLE, an island of France, called also Belle-Isle-en-Mer, 115 miles from the coast
of the department of the Morbihan, in the
devant Brittany. It is the largest of the Fr
European islands, being fifteen miles long
five broad. It is a mixture of craggy rocks
fertile soil; but the inhabitants are very p
and the principal trade carried on in it is
curing of pilchards. There are three harbou
the island, every one of which is defective, e
in being exposed, shallow, or dangerous of
trance. Its chief town is Le Palais, be
which it contains three county towns, 103 vill
and about 5000 inhabitants. In 1742 it
erected into a duchy, in favor of Mar
Belleisle. The town of Palais has a cit
fronting the sea, fortified principally by h
works, provided with two dry ditches, the
next the counterscarp, and the other so contr
as to secure the interior fortifications. This
tadel is divided from the larger part of the t
by an inlet of the sea, over which there
bridge of communication. In this state was
island in 1761, when an expedition was un
taken against it by a British fleet, under
command of Commodore Keppel, having
board a considerable land force, commande
General Hodgson. The fleet sailed from S
head on the 29th of March, and arrived be
Belleisle on the 7th of April. The attemp
land was made in three places with great r
lution; but the British were at last repul
with the loss of 500 men. It was not before
25th of April that the weather allowed a sec
attempt, which was successful, though the
sailants had many obstacles to encounter.
French were driven into Palais, and there
chevalier de St. Croix, a brave and experien
officer, resolved to hold out to the last extrem
It was not till the 7th of June that he cap
lated, and the garrison marched out with
honors of war. At this siege the marine co
then newly formed, gave the first signal pr
of that intrepidity, discipline, and fidelity,
which they have ever since been so much
tinguished. The island was restored to
French by the treaty of 1763. Long. 3° 6′
lat. 47° 18′ N.

Belle-Isle, an island of North Amer
lying at the mouth of the strait between
Britain and the north end of Newfoundla
whence the passage between them is called
Straits of Belle-Isle. The island is twenty-
miles in circuit, and the nearest land of the
brador coast is sixteen miles distance. It h
harbour for fishing vessels, and a cove w
will admit shallops. Long. 55° 15′ W., lat.
58′ N.

BELLENDEN, or Ballantine (William
Scottish writer, who flourished in the begin
of the seventeenth century, was professor of
manity, or belles-lettres, at Edinburgh,
master of the requests to James I. of Engl
But both appointments are supposed to
been only nominal, since he appears to have
sided almost constantly at Paris, where, by
favor of his sovereign, he was enabled to liv
easy circumstances. There he published in
his Cicero Princeps, a singular work; in w
he extracted, from Cicero's writings, deta
passages respecting monarchial government,

the line of conduct to be pursued, and the virtues proper to be encouraged by the prince himself. This treatise, when finished, he dedicated to the son of his master, Henry, Prince of Wales. In 1612 he published a work of a similar nature, called Cicero Consul, Senator Senatusque Romanus. He now conceived a plan of a third work, De Statu prisci Orbis, which was to contain a history of the progress of government and philosophy, to their various degrees of improvement under the Hebrews, Greeks, and Romans. He proceeded so far as to print a few copies of this work in 1615, when it was suggested to him that his treatises De Statu Principis, De Statu Reipublicæ, and De Statu Orbis, being on subjects so nearly resembling each other, there might be a propriety in uniting them into one work, by republishing the whole under the title of Bellendenus de Statu. With this view he recalled the few copies of his last work, and the three treatises appeared together under the new title in 1616. These pieces were reprinted by the late Dr. Parr. He inscribed them to Mr. Burke, Lord North, and Mr. Fox, whose talents and virtues he celebrates in a preface of seventy-six pages, and enters upon a very free and bold discussion of public men and measures, under names borrowed from antiquity. Bellenden wrote another work, published after his death, De tribus Luminibus Romanorum, whom he conceives to be Cicero, Seneca, and the elder Pliny. Dr. Middleton has been charged with borrowing not only the matter, but the arrangement, of his Life of Cicero, from Bellenden, without the least acknowledgment.

BELLENDENA, in botany, so called by Mr. Brown, in honor of John Bellenden Ker, Esq. a scientific botanist; class tetrandria, order monogynia: natural order proteaceæ. Its essential characters are: PET. four, regular and spreading: COR. white, and soon falling: STAM. inserted into the receptacle: GERM. two-seeded: STIG. simple: CAPS. without wings, not bursting: SEEDS one or two. 1. B. montana, mountain bellendena.—The only known species; found by Mr. Brown on the mountains of Van Diemen's land, but as yet unknown in our gardens. This is a perfectly smooth shrub: the leaves are scattered, flat; three-cleft at the extremity: flowers scattered, rarely in pairs: seed-vessel colored, furrowed along one edge.

BELLER, Bellay, or Belley, a town of France, in the department of the Ain, and capital of the ci-devant district of Bugey; seated near the Rhone, among the hills, on the borders of Mont Blanc, twelve or sixteen miles north-west of Chamberry, and 250 south-east of Paris.

BELLEROPHON, or Bellerophontes, in fabulous history, the son of Glaucus, king of Epirus, happening accidentally to kill his brother, he fled to Prœtus, king of Argos, who gave him a hospitable reception: but Sthenobea, his queen, falling in love with him, and finding that nothing could induce him to injure his benefactor, she accused him to her husband of an attempt to violate her honor. Prœtus, however, not willing to infringe the laws of hospitality, sent him to Iobates, king of Lysia, and father of Sthenobea, with letters desiring him to put him to death; whence the proverb, Bellerophontis literas afferet, equivalent to carrying the letters of Uriah. That prince, at the receipt of these letters, was celebrating a festival, which prevented Bellerophon's destruction. Iobates, however, sent him in the mean time to subdue the Solymi, the Amazons, and Lysians, and thought to get rid of him by exposing him to the greatest dangers; but by his prudence and courage he came off victorious. Iobates next employed him to destroy the Chimæra: when Minerva, or, according to others, Neptune, in consideration of his innocence, furnished him with the horse Pegasus, by whose assistance he killed the Chimæra. Iobates, on his return, being convinced of his truth and integrity, and charmed with his heroic virtues gave him his daughter Philonoe in marriage, and declared him his successor; which when Sthenobea heard, she killed herself. Bellerophon at length growing vain with his prosperity, resolved, by the assistance of Pegasus, to ascend the skies; when Jupiter checked his presumption, by striking him blind; on which he fell down to the earth, and wandered till his death in contempt and misery: but Pegasus mounting into heaven, Jupiter placed him among the constellations.

Belles Lettres.—Of the meaning of this term no precise definition has yet been given. It appears to be a vague designation, under which every one may include whatever he pleases. Sometimes we are told, that by the belles lettres is meant the knowledge of the arts of poetry and oratory; sometimes that the true belles lettres are natural philosophy, geometry, and other essential parts of learning; and sometimes that they comprehend the art of war, by land and sea. In treating on the belles lettres, some even talk of the use of the sacraments, &c. See Rollin on the Belles Lettres. Some comprehend under the term all those instructive and pleasing sciences which occupy the memory and the judgment, and do not make part either of the superior sciences, or of the polite arts (see Arts), or of mechanic professions; hence they make history, chronology, geography, genealogy, blazonry, philology, &c. the belles lettres. In a word, it were an endless task to attempt to enumerate all the parts of literature which different learned men have comprehended under this title.

BELLEVILLE, a town of France, in the department of the Rhone, and ci-devant district of Beaujolois, seated near the Saone. Wine is its principal article of commerce.

BELLEVOIS, painter of sea-pieces, is known through all parts of Europe, though no particulars have been handed down concerning his life. He died in 1684. His subjects are views of havens, sea-ports, shores, calms, and storms at sea. In his calms he shows peculiar excellence. His pictures are often in public sales; and those of his best style are sold pretty high.

BELHEIM, a large market town in the circle of the Rhine, and district of Spire, subject to Bavaria. The population, which amounts to 1500, is partly Catholic, partly Calvinistic, and partly Lutheran. The first two persuasions have churches.

BELLICA Columna, in antiquity, a column near the temple of Bellona, from which the consuls or feciales threw javelins towards the enemy's country, by way of declaration of war.

BELLI'CAL, Belli'cous, Belli'que, Belli'gerent. Latin, *bellum*, *bellicum*, warlike; waging war. Old Douglas introduces, in his translation of the Æneid, the word *bellical* in the sense given. Feltham, in his Resolves, denominates Cæsar 'the bellique Cæsar.'

> Never mind, brother Toby, he would say, by God's blessing we shall have another war break out again some of these days; and when it does the *belligerent* powers, if they would hang themselves, cannot keep us out of the play. *Sterne.*

BELLICULI, or Bellirici Marini, among naturalists, denote a species of sea-shells of an umbilical figure, sometimes of a white color, spotted with yellow; and sometimes of a yellow, streaked with black lines.

BELLIDUFF, an ancient tumulus, in the parish of Meigle, Angus-shire, which tradition says is the spot where Macbeth fell. At some distance, a stone of granite, twenty tons in weight, stands almost erect, to commemorate, it is said, the death of one of his generals. 'But, (Dr. Playfair, who records this tradition, observes that) that tyrant, it is more probable was slain at Lumphanan, in the Mearns.'

BELLIE, from Beul aith, Gaelic, i. e. the mouth of the Ford; a parish of Scotland, situated in Banffshire (except the town of Fochabers, which lies in the county of Murray,) extending from north to south about six miles, and from east to west nearly four, on the left bank of the river Spey. It contains about 1900 inhabitants. The soil is abundantly fertile in grain, sown grass, potatoes, and pasturage for cattle. Among its spontaneous productions is the rare plant, called satyrium repens. The town of Fochabers lies on the other side of the river, and the parish church is now built there. A handsome bridge has been thrown over the Spey at this place by the duke of Gordon. On a rising ground stands Gordon Castle, the seat of the duke of Gordon, the front of which is 568 feet in length. Near this place the duke has a capital salmon fishery on the Spey.

BELLING, applied to hops, denotes their opening and expanding to their customary shape, supposed to bear some relation to that of a bell. Hops blow towards the end of July, and bell the latter end of August or the beginning of September.

BELLINGHAM'S Bay is on the west coast of America, in the gulf of Georgia, extends from north to south about twelve miles, and has everywhere good anchorage. The bordering shores are high and rocky, but the interior consists of beautiful lawns.

BELLINI (Gentil), a Venetian painter, born in 1421. He was employed by the republic of Venice: and to him and his brother John, the Venetians are indebted for the beautiful paintings which are to be seen in the council-hall. Mahomet II. emperor of the Turks, having seen some of his performances, was so struck with
them, that he wrote to the republic, entre
them to send him. Bellini accordingly we
Constantinople, where he executed many e
lent pieces. Amongst the rest, he painte
decollation of St. John the Baptist, whon
Turks revere as a great prophet. Mahome
mired the proportion and shadowing of the
but he remarked one defect in regard to the
of the neck, from which the head was separ
and, in order to prove the truth of his observa
he sent for a slave and ordered his head
struck off. This sight so shocked the pa
that he could not be easy till he had obtaine
dismission; which the grand seignor gra
and made him a present of a gold chain.
republic settled a pension upon him at his re
and made him a knight of St. Mark. He
in 1501.

Bellini (John), brother to Gentil, pa
with more art and sweetness; and died in
aged ninety.

Bellini (Laurence), an eminent phys
born at Florence in 1643. After having fin
his early education, he went to Pisa, whe
was assisted by the generosity of the grand
Ferdinand II. and studied under two of the
learned men of that age, Oliva and Borelli.
twenty years of age he was chosen profes
philosophy at Pisa, but had acquired such a
tation for his skill in anatomy, that the
duke procured him a professorship in tha
ence. This prince was often present at his
tures. About thirty years after, Bellini, n
his fiftieth year, accepted of an invitatio
Florence, where he practised physic with
success, and was advanced to be first phy
to the grand duke Cosmo III. He wro
Latin: 1. An Anatomical Discourse o
structure and use of the Kidneys. 2. A S
by way of thanks to the serene duke of Tu
3. Of the Urine and Pulse, of Blood-le
Fevers, and Diseases of the Head and Brea
Several Tracts concerning urine, the motion
heart, and bile, &c. He died January 8th,
His works were read and explained pu
during his life, by the famous Scotch phys
Dr. Pitcairn, of Leyden.

BELLINZONA, a district of Switzerla
the east bank of the Ticino. It has for boun
the country called the Gray League of th
sons, the lake of Como, and the distr
Riviera, Locarno, and Lugano, containin
square miles, 46,000 inhabitants, and
parishes. On the re-organisation of the
republic in 1798, Bellinzona constituted fo
time an independent canton, but was form
1801, along with the other Italian distr
Switzerland, into the canton of the Tic
which the town of Bellinzona is capital.

Bellinzona, a town of Switzerland, fo
the capital of the preceding district, and
the canton of the Ticino, is at the extrem
valley of the same name, where two pre
rocks leave only sufficient room for the co
the Ticino, and the road to Milan. The
built on these rocks, and forms the main p
the Italian side of mount St. Gothard.
tains 1500 inhabitants, an old citadel (fo
the residence of the governor of the dist

collegiate church, and three convents. It is well built, has its own magistrates, and is much benefited by the continual passage of merchandise between Switzerland and Italy. It suffered much in the campaign of the French and Russians in 1799. Twenty-five miles S.S.W. of Como, and forty south of Zurich.

BELLIRICI Marini See Belliculi.

BELLIS, in botany, the daisy; a genus of the syngenesia order, and the polygamia superflua class of plants; ranking in the natural method under the forty-ninth order, compositæ discoides. The receptacle is naked and conic; there is no pappus; the calyx is hemispherical, with equal scales; and the seeds are ovated. There are three species, and many varieties. 1. B. annua, with leaves on the lower part of the stalk, is a low annual plant growing naturally on the Alps, and the hilly parts of Italy. 2. B. hortensis, the garden daisy, with a large double flower. 3. B. perennis, the common daisy, with a naked stalk, and one flower, grows naturally in pasture lands in most parts of Europe. It is often a troublesome weed in the grass of gardens, and so is never cultivated.

Bellis Major. See Chrysanthemum.

BELLIUM, in botany, bastard daisy; a genus of plants of the class syngenesia, order polygamia superflua. Generic character is receptacle naked; seeds conical; crown paleaceous, of eight leaves; awned, and furnished with a pappus: leaflets of the calyx equal. It is a genus allied to bellis, containing two species, one of which is a native of Italy, and the other of the Levant.

Bell-metal, a composition of tin and copper melted together, which is more sonorous than either of these ingredients taken apart. The ordinary proportion is about twenty-two or twenty-three pounds of tin to 100 pounds of copper; though it varies according to the size of the bells; a greater quantity of copper being used in the greater bells than in the smaller. Some add lead and brass, others zinc or spelter. Though tin is specifically lighter than copper, yet the gravity of the compound is greater than that of copper. Some speak of a native mineral under the denomination bell-metal, from which Becher affirms he procured zaffer and smalt. See Chemistry.

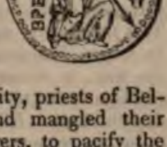
BELL-MUSCHUS, in botany, a name given by some authors to the plant called bamia moschata, the mosch seed.

BELLON, a distemper common in countries where they smelt lead ore. It is attended with languor, intolerable pains and sensations of griping, and generally costiveness. It frequently proves fatal. Beasts, poultry, &c. as well as men, are subject to this disorder: hence the term

Bellon Ground, for the space round the smelting houses, because it is dangerous for an animal to feed upon it.

Bellon, or **Bellonius** (Peter), a celebrated French physician, born at Caen, in Normandy, was the author of many tracts on botany, natural history, &c. and gave name to the genus of plants called Bellonia.

BELLONA, in Pagan mythology, the goddess of war, is generally reckoned the sister of Mars; some represent her as both his sister and wife. She is said to have been the inventress of the needle; and from that instrument is supposed to have taken her name. Βελονη, a needle. She was of a cruel and savage disposition, and is commonly represented in an attitude expressive of fury; her hair composed of snakes, clotted with gore, and her garments stained with blood: thus she drives the chariot of Mars, with a bloody whip in her hand; or sometimes holding a lighted torch or brand; at others a trumpet. She had a temple at Rome, near the circus Flaminius, before which stood the column of war, from whence the consul threw his lance when he declared war. She was also worshipped at Cumana, in Cappadocia: and Camden observes, that in the time of the emperor Severus, there was a temple to Bellona in the city of York. This goddess is represented on medals of the Brutii, &c. as in the annexed figure, with a shield in both her hands, and a spear resting on her shoulders.



BELLONARII, in antiquity, priests of Bellona. The bellonarii cut and mangled their bodies with knives and daggers, to pacify the deity, In this they are singular, that they offered their own blood, not that of other creatures, in sacrifice. In the fury and enthusiasm wherewith they were seized on these occasions, they ran about raging, uttering prophecies, and foretelling slaughter, devastations of cities, and revolutions of states: whence Martial calls them turba entheata Bellonæ. In after-times they seem to have abated much of their zeal, and to have turned the whole into a kind of farce, contenting themselves with making signs and appearances of cutting. Lampridius tells us, the emperor Commodus, out of a spirit of cruelty, turned the farce again into a tragedy, obliging them to cut and mangle their bodies really.

BELLONIA, in botany, a genus of the monogynia order, and pentandria class of plants. The characters are, the flower is wheel-shaped, of one leaf with a short tube, but spread open above, and cut into five obtuse segments; it has five stamina, which close together; the germen is situated under the receptacle of the flower, which afterwards becomes an open turbinated seed-vessel, ending in a point, having one cell filled with small round seeds. Of this genus there is only one species known, viz. B. aspera, or shrubby bellonia, which has a rough balm leaf. It is very common in the warm islands of America.

BELLORI (John Peter), of Rome, a celebrated antiquary and connoisseur: author of the lives of the modern painters, architects, and sculptors, and other works on antiquities. He died in 1696.

BELLOVACI, a people of Gallia Belgica, reckoned the bravest of the Belgæ; who anciently possessed that part of France called Beauvoisis, before the revolution in the isle of France.

BEL'LOW,
Bel'lower,
Bellow'ing.
Ang.-Sax. hlowan; a lowing; a loud roaring noise, like a bull, or like the sea in

a storm; any continued noise that may cause terror.

Till, at the last, he heard a dreadful sound,
Which thro' the wood loud *bellowing* did rebound.
Spenser.

Jupiter became a bull, and *bellowed*; the green Neptune a ram, and bleated. *Shakspeare.*

He fastened on my neck, and *bellow'd* out,
As he'd burst heaven. *Id.*

The rising rivers float the nether ground;
And rocks the *bellowing* voice of boiling seas rebound.
Dryden.

What bull dares *bellow*, or what sheep dares bleat,
Within the lion's den? *Id.*

But now the husband of a herd must be
Thy mate, and *bellowing* sons thy progeny. *Id.*

The dull fat captain, with a hound's deep throat,
Would *bellow* out a laugh in a base note. *Id.*

This gentleman is accustomed to roar and *bellow* so terribly loud, that he frightens us. *Tatler.*

BELLOWS are properly defined a machine, so contrived as to expire and inspire the air by turns, by enlarging and contracting its capacity. This machine is used in chambers and kitchens, in forges, furnaces, and foundries, to blow up the fire: it serves also for organs and other pneumatic instruments, to give them a proper degree of air. All these are of various constructions, according to their different purposes; but in general they are composed of two flat boards, sometimes of an oval, sometimes of a triangular figure. Two or more hoops, bent according to the figure of the boards, are placed between them; a piece of leather, broad in the middle, and narrow at both ends, is nailed on the edges of the boards, which it thus unites together; as well as on the hoops which separate the boards, that the leather may the easier open and fold again: a tube of iron, brass, or copper, is fastened to the undermost board, and there is a valve within that covers the holes in the under board, to keep in the air

Anacharsis, the Scythian, is said to have been the inventor of bellows. Their action bears a near affinity to that of the lungs; and what we call blowing in the latter, affords a good illustration of what is called respiring in the former. Animal life itself may on some occasions be subsisted by blowing into the lungs with a pair of bellows. Dr. Hooke's experiment is remarkable: having laid the thorax of a dog bare, by cutting away the ribs and diaphragm, pericardium, &c. and having cut off the aspera arteria below the epiglottis, and bound it on the nose of a bellows, he found, that as he blowed, the dog recovered, and as he ceased, fell convulsive; and thus was the animal kept alternately alive and dead above the space of an hour. There are bellows made wholly of wood, without any leather about them; one of which is preserved in the repository of the Royal Society; and Dr. Plot describes another in the copper-works at Ellaston in Staffordshire. Bellows are in constant use among the apparatus of the Royal Humane Society, for the recovery of the apparently drowned: and will enable any intelligent person to inflate the lungs, and by occasional pressure on the breast to imitate the action of natural breathing.

For the great operations of metallurgy, such as are of uncommon construction, and great power,
are found necessary, and have generally a
the name of BLOWING MACHINES, which

Chinese BELLOWS consist of a box of
about two feet long, and one foot square;
the machine may be made of any requisite
sions. The opposite boards are exactly p
to each other, smooth, and varnished both
outer and inner sides. A thick square b
wood, which exactly fits the internal cavity
box, is pushed backwards and forwards,
end to end of the box, by means of a cyli
rod of wood, which comes out at an a
in the centre of one end of the box, and in
to make the rod move steadily, and preve
escape of air, the aperture through which
passes has a wooden tube projected fro
the distance of a little more than an inch.
the conveniency of pushing the rod back
and forwards, its extremity is furnished
handle, or cross bar of wood, like the hea
gimlet, by which it can be laid hold of.
bottom of the box, at each end, there is a
conical or plug valve, concealed in the
board of the box. The two valves below
air alternately into the box, while the
above alternately discharge the air; and,
same time, the valves prevent the air from r
ing the same way it had once passed. The
board is double, and the space betwixt
serves as a reservoir in which the accumulat
is condensed. Into the side of this rese
between the boards, a metallic pipe is ins
which conducts the air, in a constant stream
the furnace or forge. It is evident that
movable board or piston, within the bo
pushed by the rod from the end next the h
to the opposite end of the box, all the air
box will be forced up through the valve
that end of the box; while the under val
that end will shut, and prevent its escape d
wards: at the same time new air will r
through the under valve next the handle
again fill the box. By pulling out the ro
movable board or piston will be drawn i
opposite direction, and all the air in the bo
now be forced up through the upper valv
the handle, into the reservoir, and from th
as it cannot escape by the opposite valve,
through the metallic pipe into the furnace.
these valves, by opening and shutting altern
as long as the piston or movable board is p
or drawn by the rod, backwards and for
from end to end of the box, a constant and
erful stream of air will be blown into the fu
The above description is copied from a ma
of this sort, which the ingenious Dr. Li
Windsor, brought from Canton, in China.
its help he could melt pig-iron in a sma
nace, consisting of an Austrian crucible, fi
a table. Such bellows are neither so costl
so apt to go wrong, as those composed of le
They may be made of any dimensions, an
be wrought by any power as well as that
hand. It is surprising that no attempts
been made to bring them into use in
country.

BELLOWS, HYDROSTATIC. See HY

BELLOWS OF AN ORGAN are commonly
long, and four broad; each having an a

of four inches, that the valve may play easily. There should likewise be a valve at the nose of the bellows, that the one may not take the air from the other. To blow an organ of sixteen feet, there are required four pairs of these bellows. They are wrought by a man called the blower; and, in small organs, by the foot of the player.

Bellows, Water, a contrivance to save expense in the fusion of metals, wherein water, falling through a funnel into a close vessel, sends from it so much air as blows the fire. See Furnace.

BELL-PEPPER, in botany. See Capsicum.

BELL-ROCK, or Cape, a dangerous ridge of sunken rocks, lying about twelve miles east from the point of Fife-ness, and an equal distance south from Arbroath harbour, between the openings of the Friths of Tay and Forth. The ridge extends about a mile in length, and half a mile in breadth; the top of the rock only being seen a few hours at low water in spring tides. This rock not only renders the navigation of the Tay and Forth very hazardous, but is also highly dangerous to all vessels navigating coast-wise. Every year, formerly, vessels of great value were wrecked upon it, and there is reason to suspect that many which were supposed to have foundered at sea, have suffered on this dangerous reef. It is a remarkable fact that hardly a single instance has been known of a vessel being saved which had the misfortune to strike upon this rock. Captain Brodie of the royal navy placed a beacon on it some years ago, but though the greatest care was taken to have it properly secured, the first storm broke the chains, and the beacon was driven ashore. Previous to the erection of the new and noble light-house now placed here, it was commonly remarked that even if it were practicable to erect it upon such a sunken rock, no one would be found hardy enough to live in an abode so dread and dreary, and that it would fall to the lot of the projectors themselves to possess it for the first winter. The bill appointing commissioners for this great undertaking, however, passed both houses of parliament late in the session of 1806. In the following summer, a vessel was fitted out as a floating-light, and moored off the Bell-rock. Captain Brodie had previously constructed a very ingenious model of a cast-iron light-house standing on pillars; and Mr. Murdoch Downie, author of several marine surveys, brought forward a plan of a light-house, to stand upon pillars of stone. Mr. Telford, the engineer, was also employed in some preliminary steps, connected with Mr. Downie's enquiries. But Mr. Stevenson, engineer for the commissioners of the northern light-houses, modelled the first design, which was submitted to the opinion and advice of Mr. Rennie. This distinguished engineer coincided with Mr. Stevenson in preferring a building of stone, upon the principles of the Eddystone light-house.

The Bell-rock Light-house is a circular building, the foundation-stone of which is nearly on a level with the surface of the sea at low-water of ordinary spring-tides; and consequently at high-water of these tides, the building is immersed to the height of about fifteen feet. The two first or lower courses of the masonry are imbedded into the rock, and the stones of all the courses are dovetailed and joined with each other, forming one connected mass from centre to circumference. The successive courses of the work are also connected by joggles of stone; and to prevent the stones from being lifted up by the force of the sea, while the work was in progress, each stone of the solid part of the building had two holes bored through it, entering six inches into the course immediately below, into which oaken tree nails, two inches in diameter, were driven, after Mr. Smeaton's plan at the Eddystone. The cement used at the bell-rock, like that of the Eddystone, was a mixture of pozzolano, earth, lime, and sand, in equal parts, by measure. The building is of a circular form, composed of stones of the weight of from two tons to half a ton each. The ground course measures 42 feet in diameter, and the building diminishes, as it rises to the top, where the parapet-wall of the light-room measures only 13 feet in diameter. The height of the masonry is 100 feet, but including the light-room, the total height is 115 feet. The building is solid from the ground course to the height of 30 feet, where the entry-door is situate, to which the ascent is by a kind of rope-ladder with wooden steps, hung out at ebb tide, and taken into the building again when the water covers the rock; but strangers to this sort of climbing are taken up in a chair, by a movable crane projected from the door, from which a narrow passage leads to a stone stair-case 13 feet in height. Here the walls are seven feet in thickness, but they generally diminish from the top of the stair-case to the parapet-wall of the light room, where they measure one foot in thickness. The upper half of the building may be described as divided into six apartments for the use of the light-keepers, and for containing light-house stores. The lower or first, formed by an inside scarfement of the walls at the top of the stair-case is chiefly occupied with water tanks, fuel, and the other bulky articles; the second floor is for the oil, cisterns, glass, and other light-room stores; the third is occupied as a kitchen; the fourth is the bed-room, the fifth the library or strangers' room, and the upper apartment forms the light-room. The floors of the apartments are of stone, and the communication is made by means of wooden ladders, excepting in the light-room, where every article being fire proof, the steps are made of iron. There are two windows in each of the three lower apartments, but the upper have each four windows. The casements are all double, and are glazed with plate-glass, having besides an outer storm-shutter, or dead light of timber, to defend the glass from the waves and spray. The parapet wall of the light-room is six feet in height, and has a door which leads out to the balcony or walk formed by the cornice round the upper part of the building; which is surrounded by a cast-iron rail, wrought like net-work. This rail rests upon batts of brass and has a massive coping, or top rail, of the same metal. In the kitchen, there is a grate or open fire-place of cast iron, with a smoke tube of the same metal, which passes through the several apartments of the light-room, and heats them in its passage upwards. This grate and chimney merely touch the building, without being included or built into the walls, which, by this means, are neither weakened, nor liable to be injured by it. The timber of the doors, the pannelled partitioning of the rooms from the stairs, and the bed frames and furniture in general, are of wainscot.

The light-room, and its apparatus was entirely prepared at Edinburgh. It is of an octagonal figure, 12 feet across, and 15 in height, formed with cast-iron sashes, glazed with large plates of polished glass, measuring about 2 feet 6 inches by 2 feet 3 inches, each plate being a quarter of an inch thick. The light-room is covered with a dome roof of copper, terminating in a large gilded ball, with a vent-hole in the top. The light of the Bell-rock is very powerful, and is readily seen at the distance of six or seven leagues, when the atmosphere is clear. The light is from oil, with Argand burners placed in the focus of silver plated reflectors, measuring 24 inches over the lips; the silvered surface or face being hollowed or wrought to the parabolic curve. That the Bell-rock light may be easily distinguished from all other lights upon the coast, the reflectors are ranged upon a frame with four faces or sides, which, by a train of machinery, is made to revolve upon a perpendicular axis once in six minutes. Between the observer and the reflectors, on two opposite sides of the revolving frame, shades of red glass are interposed, in such a manner, that during each entire revolution of the reflectors, two appearances, distinctly differing from each other, are produced; one is the common bright light familiar to every one, but, on the other, or shaded sides, the rays are tinged of a red color. These red and bright lights, in the course of each revolution, alternate with intervals of darkness, which, in a very beautiful and simple manner, characterise this light.

In foggy weather two large bells of about 12 cwt. each, are tolled day and night by machinery. Vessels who cannot see the lights, thus get warning to put about. The establishment at the Bell-rock, consists of a principal light-keeper, who has 60 guineas per annum, paid quarterly, a principal assistant, who has 55 guineas; and two other assistants at 50 guineas each, besides a suit of uniform clothes, in common with the other light-keepers of the northern light-houses, every three years. While at the rock, these men get a stated allowance of bread, beef, butter, oat-meal, pot-barley, and vegetables, besides small beer, and an allowance of fourpence per day each for the purchase of tea and other necessaries. At Arbroath, the most contiguous town on the opposite coast, a suite of buildings has been erected, where each light-keeper has three apartments for his family. Here the master and mate of the light-house tender, have also accommodation for their families; a plot or piece of an enclosed garden ground is attached to each house, and likewise a seat in one of the pews in the parish church of Arbroath. Connected with these buildings there is a signal tower erected, which is about 50 feet in height. At the top of it, there is a room with an excellent five feet achromatic telescope, placed upon a stand. From this tower, a set of corresponding signals is
arranged, and kept up with the light-keep
the rock. Three of the light-keepers are
at the light-house, while one is ashore on l
whose duty it is for the time to attend the
room; and when the weather will admit
regular removal of the light-keepers they
weeks at the rock, and a fortnight ashore
their families.

The attending vessel for the Bell-rock, a
light-houses at the isle of May and Inchke
the Firth of Forth, is a very handsome
cutter of about 50 tons register, carrying
her prow a model of the light-house,
appropriately named the Pharos. She is sta
at Arbroath, and is in readiness to proceed
rock at new and full moon, or at spring-
carrying necessaries, and the light-keeper on
to the rock, and returning with another.
vessel is navigated by four men, includin
master, and is calculated for carrying a b
16 feet keel, or of sufficient dimensions for
ing at the rock in moderate weather. The m
and mate are kept in constant pay, and
apartments in the establishment ashore; th
mer, acting as a superintendent, has the c
of the buildings and stores kept at Arbroat

BELLULÆ, in zoology, the sixth order
mammalia; the character of which is, that
fore teeth are obtusely truncated, their feet h
their walk heavy, and their food vegetables
Zoology.

BELLUGA, in ichthyology, a large
accounted a species of sturgeon, and calle
Artedi, accipenser tuberculis carens It is
the sturgeon in shape, but its snout is shorte
thicker. Of its row or spawn is made c
and some of them are so large as to yield
weight of it. The fish is very common and
large in the Volga, near the city of Astraca
has been caught there thirty-six feet long,
eighteen thick. It is also found in the Don
other rivers, and in the Baltic and Caspian
See Accipenser.

BELLULA Bos, in icthyology, a name
by Paulus Jovius to that species of the ra
which was called by the old Greek and
writers bos marinus, and by the late author
oxyrynchus. It is distinguished by Arted
the name of the variegated ray, with ten p
tubercles on the middle of the back.

BELLUM, Lat. war; in old law, tri
combat.

BELLUNESE, a territory of Italy, whic
longed to the Venetians, till ceded to Au
by the treaty of Campo Formio. It now
a part of the Lombardo-Venetian kingdom
lies between Friuli, Cadorino, Feltrin
bishopric of Trent and Tyrol. It is thirty
long, and twenty-two broad, and produces
of corn, wine, fruits, &c. besides rearing
numbers of cattle. It contains besides the
tal, Belluno, 200 towns, villages, and forts,
40,000 inhabitants.

BELLUNO, a town of Italy, and a bi
see; is situated among the Alps, on the
Piave.

BELLUTUS (Sicinius), a plebeian R
who, about the year of Rome 256, headi
people in their opposition to the exorbitant

of the Senate and Patricians; and under whom they retired to the Mons Sacer, about three miles from Rome, intending to form a new establishment for themselves, till, after repeated messages sent in vain by the senate, Menenius Agrippa persuaded them to return, by the well known fable of the belly and the other members. On this occasion the tribune-ship being first instituted, Bellutus was appointed the first of the five Tribunes, A. U. C. 560. See Rome

BELLY, *v.* & *n.*
Belly'ache,
Belly'bound,
Belly'cheer,
Belly'full,
Belly'fare,
Belly'slave,
Belly'god,
Belly'pinched,
Belly'timber,
Belly'worm.

Gothic, *balgs*; Ang.-Sax. *bælg*; Lat. *bulga*; that part of the human body which reaches from the head to the thighs, containing the bowels; the womb; any thing that swells out to a large capacity. To belly out, is to swell out; to inflate; to sketch; to distend.

The body's members
Rebell'd against the *belly*; thus accus'd it :—
That only like a gulf it did remain,
Still cupboarding the viand, never bearing,
Like labour with the rest. *Shakspeare.*

Do you set down your name in the scroll of youth, that are written down old with all the characters of age? Have you not a moist eye, a dry hand, a yellow cheek, a white beard, a decreasing leg, an increasing *belly?* *Id.*

This night, wherein the cubdrawn bear would couch,
The lion and the *belly-pinched* wolf
Keep their fur dry, unbonnetted he runs. *Id.*

Back and side go bare, go bare,
Both hand and foot go cold:
But *belly*, God send thee good ale enough,
Whether it be new or old. *Still. Old Song.*

With Methos, Gluttony, his guttling brother,
Twin parallels, drawn from the self-same line;
So foully like was either to the other,
And both most like a monstrous *belly'd* swine.
Fletcher. Purple Island.

What infinite waste they made this way, the only story of Apicius, a famous *bellygod*, may suffice to shew. *Hakewell.*

Thus, by degrees, day wastes, signs cease to rise,
For *bellying* earth, still rising up, denies
Their light a passage, and confines our eyes.
Creech's Manilius.

Loud rattling shakes the mountains and the plain,
Heav'n *bellies* downwards, and descends in rain.
Dryden.

'Midst these disports, forget they not to drench
Themselves with *bellying* goblets. *Philips.*

The strength of every other member
Is founded on your *belly-timber*. *Prior.*

Belly in anatomy, the abdomen. See Anatomy, Index.

Belly, Dragon's, venter draconis, is used by some astronomers to denote the point in a planet's orbit, wherein it has its greatest latitude, or is farther distant from the ecliptic, more frequently called its limit.

BELMONTE, a town of Italy, in the hither Calabria and kingdom of Naples. It is situated on the coast of the Tuscan sea. It is celebrated for its fine marbles.

BELOCK, be and lock. See Lock.

BELOE (William), a native of Norwich, educated at Cambridge. About 1773 he became assistant to Dr. Parr, who was then head master of the Norwich grammar school. He shortly after obtained the vicarage of Earlham. Removing to the metropolis, he was made master of Emanuel College, Westminster, and he joined with Archdeacon Nares in establishing and editing the British Critic. His connexion with this work continued till the close of the forty-second volume. He also obtained the living of Allhallows, London-wall, a prebend in St. Paul's, and the desirable post of a librarian to the British Museum. Of the last situation, however, he was deprived, in consequence of the loss of some valuable prints, which were stolen by a dishonest artist. He died at Kensington in 1817. He translated Herodotus, and Aullus Gellus, and was the author of Miscellanies, 3 vols. Anecdotes of Literature and Scarce books, 6 vols. 8vo. The Sexagenarian (his own memoirs), 2 vols. 8vo. and some works of minor importance.

BE'LOMANCY, *n. s.* From βελος and *μαντεια.*

Belomancy, or divination by arrows, hath been in request with Scythians, Alans, Germans, with the Africans and Turks of Algiers.
Brown's Vulgar Errours.

Belomancy, Belomantia, was practised in the east, but chiefly among the Arabians, and in different ways. One was to mark a parcel of arrows, and put eleven or more of them into a bag: these were drawn out; and according as they were marked or not, they judged of future events. Another way was to have three arrows, upon one of which was written, 'God orders it me:' upon another, 'God forbids it me;' and upon the third nothing. These were put into a quiver, out of which one was drawn at random; if it happened to be that with the first inscription, the thing was to be done: if it chanced to be that with the second, it was let alone; but if it it proved that without inscription, they drew over again. Belomancy is an ancient practice, and probably that which Ezekiel mentions, chap. xxi. 21. At least St. Jerome understands it so, and observes that the practice was frequent among the Assyrians, and Babylonians. Something like it is also mentioned in Hosea, chap. iv. only that slaves are mentioned instead of arrows, which is rather that of demancy than belomancy. Grotius, as well as Jerome, confounds the two together, and shows that it prevailed among the Magi, Chaldeans, and Scythians; whence it passed to the Sclavonians, and thence to the Germans, who, as Tacitus observes made use of it.

BELON (Peter), born at Mans, in France flourished about the middle of the sixteenth century. He was murdered near Paris by one of his enemies, in 1565. His principal works are, 1. De Arboribus Coniferis, 4to. Paris, 1553. 2. Histoire de la Nature des Oiseaux, fol. 1555. 3. Portraits d'Oiseaux, 4to. 1557. 4. Histoire des Poissons, 4to. 1551, with plates. 5. De la Nature et Diversité des Poissons, 8vo. 1555.

BELONE, in ichthyology, the trivial name of a species of esox. See Esox.

BE'LONG, *v. n.* Dutch *belangen.* To be the property, province, or business of; to adhere, appertain, or have relation to.

To light on a part of a field *belonging* to Boaz. *Ruth.*

There is no need of such redress;
Or if there were it not *belongs* to you.
Shakspeare.

The declaration of these latent philosophers *belongs* to another paper. *Boyle.*

To Jove the care of heav'n and earth *belongs*
Dryden.

He went into a desart *belonging* to Bethsaida.
Luke.

To whom *belongest* thou? whence art thou?
1 *Samuel.*

The faculties *belonging* to the supreme spirit, are unlimited and boundless, fitted and designed for infinite objects. *Cheyne.*

He careth for things that *belong* to the Lord.
1 *Corinth.*

BELOSTOMA, in zoology, a genus of insects of the order hemiptera, family hydrocorisæ. Its generic character is, fore feet terminated by a single hook; antennæ semi-pectinated. There is no European species.

BE'LOVED, *part.* From belove, derived of love. It is observable, that though the participle be of very frequent use, the verb is seldom or never admitted; as we say 'you are much *beloved* by me,' but not 'I *belove* you.' Loved; dear.

I think it is not meet,
Mark Antony, so well *beloved* of Cæsar,
Should outlive Cæsar. *Shakspeare.*

In likeness of a dove
The Spirit descended, while the Father's voice
From heav'n pronounc'd him his *beloved* Son.
Milton.

Each lonely scene shall thee restore,
For thee the tear be daily shed;
Belov'd till life can charm no more,
And mourn'd till pity's self be dead.
Collins' Dirge.

BE'LOW, *prep.* & *adv.* }
BE'LOWT, *v.* } Be and low. Low is the past participle of the Ang.-Sax. verb, licȝan, *jacere, cubiere. Belowt*, is to treat as a *lowt.* Under, in place; not high; unbefitting; unworthy of; in the lower place; in hell; in earth, in opposition to heaven.

For all *below* the moon I would not leap.
Shakspeare.

He'll beat Aufidius' head *below* his knee,
And tread upon his neck. *Id.*

To men standing *below* on the ground, those that be on the top of Paul's seem much less than they are, and cannot be known; but, to men above, those *below* seem nothing so much lessened, and may be known.
Bacon.

The upper regions of the air perceive the collection of the matter of the tempests and winds before the air here *below*; and therefore the obscuring of the smaller stars, is a sign of tempest following. *Id.*

His sultry heat infects the sky;
The ground *below* is parch'd, the heav'ns above us fry.
Dryden.

'Tis much *below* me on his throne to sit;
But when I do, you shall petition it. *Id.*

This said, he led them up the mountain's brow,
And show'd them all the shining fields *below*. *Id.*

The gladsome ghosts in circling troops attend;
Delight to hover near, and long to know
What bus'ness brought him to the realms *below*. *Id.*

When suff'ring saints aloft in beams shall glow,
And prosp'rous traitors gnash their teeth *below*.
Tickell.

And let no tears from erring pity flow,
For one that's bless'd above, immortaliz'd *below*.
Smith.

The fairest child of Jove,
Below for ever sought, and bless'd above. *Prior.*

The noble Venetians think themselves equal at least to the electors of the empire, and but one degree *below* kings. *Addison.*

His Idylliums of Theocritus are as much *below* his Manilius, as the fields are *below* the stars. *Felton.*

Sieur Gaulard, when he heard a gentleman report that at supper they had not only good cheer, but also savoury epigrams and fine anagrams, returning home, rated and *belowted* his cook as an ignorant scullion, that never dressed him either epigrams or anagrams.
Camden.

Father of all above and all *below*,
O great! and far beyond expression so,
No bounds thy knowledge, none thy power confine,
For power and knowledge in their source are thine.
Parnell.

BELPECH, a town of France, in Languedoc, department of the Aude. In 1369 this place was taken by the English, and among the prisoners was Isabella, mother of the queen of France. It is seven miles north-west of Mirepoix, and twelve south-west of Castelnaudary. Long. 150° E., lat. 43° 12′ N.

BELSHAZZAR, NABONADIUS, or LABYNITUS, the last king of Babylon, is generally agreed to have been the son of Evil-Merodach, by the celebrated Nitocris, and grandson of Nebuchadnezzar the Great. He succeeded upon the deaths of his uncle-in-law Neriglissar, and his infant cousin Làborosoarchod (with whom some authors confound him), about A. M. 3393, or, according to others, 3449. He is said to have reigned seventeen years, but was so devoted to pleasure, that nothing is recorded of him, excepting his folly, dissipation, and impiety, till the last day of his reign and life: when the miraculous vision of the hand-writing on the wall, denouncing the immediate overthrow of his empire, alarmed him and his impious nobles, in the midst of their guilty festival; and led him to apply for advice, when too late, to the long neglected prime minister and prophetic instructor of his grandfather. See Daniel, chap. v. Babylon was taken by Cyrus, Belshazzar slain, and the kingdom transferred to the Medes and Persians: A. M. 3410, or 3466, and about A. A. C. [illegible]. See BABYLONIA.

BEL'SWAGGER, *n. s.* A cant word for a whoremaster.

You are a charitable *belswagger*; my wife cried out fire, and you cried out for engines. *Dryden.*

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